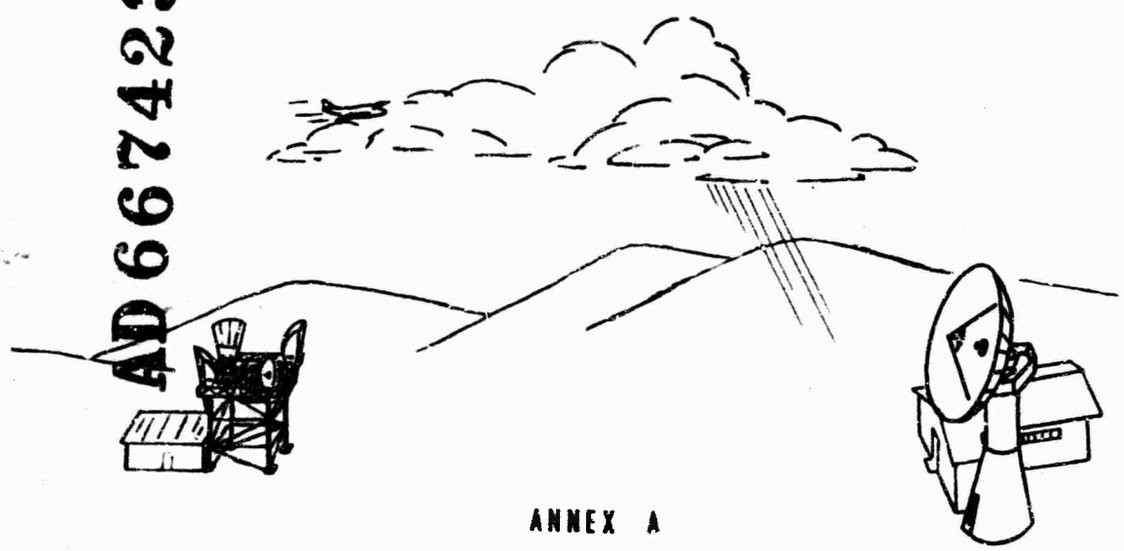
# FEDERAL COMMUNICATIONS COMMISSION--U.S. AIR FORCE

# POPSI PROJECT

AD667423



ANNEX A

REPORT NO. R-6801

By
Roger B. Carey
Daniel B. Hutton
Gary S. Kalagian

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RESEARCH DIVISION
OFFICE OF THE CHIEF ENGINEER
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554
March 15, 1968

FEDERAL COMMUNICATIONS COMMISSION
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ANNEX A

REPORT NO. R-6801

March 15, 1968

# FCC/USAF POPSI PROJECT

By
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Washington, D. C.

ANNEX A

Path Configuration and Sample Population


Table 1 NAFEC
Table 2 Wildwood
Table 3 Wallops Island, Virginia

NAFEC

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | No of On-Path Samples | No of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 5/13/66 to 8/16/66 | 1° | 6° | 2° | 0° | 1/2 | 1046 | 1050 |
| | | | | | 1 | 277 | 374 |
| | | | | | 2 | 273 | 369 |
| | | | | | 3 | 277 | 372 |
| | | | | | 4 | 276 | 371 |
| | | | | | 5 | 274 | 371 |
| | | | | | 6 | 274 | 369 |
| | | | | | 7 | 268 | 373 |
| | | | | | 8 | 268 | 366 |
| | | | | | 9 | 264 | 366 |
| | | | | | 10 | 267 | 368 |
| 5/13/66 to 6/7/66 | | | | 3° | 1/2 | 107 | 91 |
| | | | | | 1 | 107 | 91 |
| | | | | | 2 | 107 | 91 |
| | | | | | 3 | 107 | 91 |
| | | | | | 4 | 106 | 88 |
| | | | | | 5 | 106 | 88 |
| | | | | | 6 | 106 | 88 |
| | | | | | 7 | 106 | 86 |
| | | | | | 8 | 105 | 86 |
| | | | | | 9 | 105 | 86 |
| | | | | | 10 | 105 | 86 |
| | | | | 6° | 1/2 | 107 | 91 |
| | | | | | 1 | 106 | 90 |
| | | | | | 2 | 107 | 92 |
| | | | | | 3 | 107 | 93 |
| | | | | | 4 | 107 | 92 |
| | | | | | 5 | 107 | 92 |
| | | | | | 6 | 107 | 91 |
| | | | | | 7 | 108 | 92 |

TABLE 1

Table 1 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | No of On-Path Samples | No of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 5/13/66 to 6/7/66 | 1° | 6° | 2° | 6° | 8 | 108 | 92 |
| | | | | | 9 | 107 | 92 |
| | | | | | 10 | 107 | 92 |
| 6/7/66 to 8/16/66 | | | | 9° | 1/2 | 140 | 245 |
| | | | | | 1 | 143 | 244 |
| | | | | | 2 | 143 | 248 |
| | | | | | 3 | 146 | 245 |
| | | | | | 4 | 147 | 244 |
| | | | | | 5 | 146 | 241 |
| | | | | | 6 | 147 | 238 |
| | | | | | 7 | 147 | 232 |
| | | | | | 8 | 147 | 235 |
| | | | | | 9 | 146 | 243 |
| | | | | | 10 | 145 | 246 |
| | | | | 12° | 1/2 | 146 | 252 |
| | | | | | 1 | 149 | 254 |
| | | | | | 2 | 149 | 249 |
| | | | | | 3 | 148 | 248 |
| | | | | | 4 | 149 | 249 |
| | | | | | 5 | 149 | 240 |
| | | | | | 6 | 149 | 240 |
| | | | | | 7 | 149 | 241 |
| | | | | | 8 | 149 | 240 |
| | | | | | 9 | 150 | 247 |
| | | | | | 10 | 150 | 251 |
| 8/19/66 to 11/25/66 | 1° | 3° | 2° | 0° | 1/2 | 522 | 736 |
| | | | | | 2 | 149 | 200 |
| | | | | | 4 | 142 | 203 |
| | | | | | 6 | 141 | 202 |
| | | | | | 8 | 135 | 196 |
| | | | | | 10 | 135 | 198 |
| | | | | | 12 | 139 | 200 |
| | | | | | 14 | 136 | 201 |

Table 1 (cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | No of On-Path Samples | No of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 8/19/66 to 11/25/66 | 1° | 3° | 2° | 0° | 16 | 138 | 203 |
| | | | | | 18 | 135 | 201 |
| | | | | | 20 | 140 | 201 |
| | | | | 12° | 1/2 | 113 | 165 |
| | | | | | 2 | 116 | 168 |
| | | | | | 4 | 118 | 170 |
| | | | | | 6 | 118 | 170 |
| | | | | | 8 | 117 | 170 |
| | | | | | 10 | 117 | 170 |
| | | | | | 12 | 117 | 168 |
| | | | | | 14 | 117 | 169 |
| | | | | | 16 | 117 | 170 |
| | | | | | 18 | 116 | 169 |
| | | | | | 20 | 115 | 170 |
| | | | | 18° | 1/2 | 117 | 169 |
| | | | | | 2 | 120 | 172 |
| | | | | | 4 | 120 | 172 |
| | | | | | 6 | 121 | 173 |
| | | | | | 8 | 120 | 173 |
| | | | | | 10 | 122 | 174 |
| | | | | | 12 | 122 | 172 |
| | | | | | 14 | 123 | 172 |
| | | | | | 16 | 123 | 174 |
| | | | | | 18 | 123 | 176 |
| | | | | | 20 | 123 | 175 |
| 1/24/67 to 2/16/67 | 1° | 3° | 2° | 0° | 1/4 | 307 | 461 |
| | | | | | 3 | 140 | 128 |
| | | | | | 6 | 134 | 124 |
| | | | | | 9 | 141 | 127 |
| | | | | | 12 | 141 | 128 |
| | | | | | 15 | 142 | 128 |
| | | | | | 18 | 141 | 126 |

Table 1 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | No of On-Path Samples | No of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 1/24/67 to 2/16/67 | 1° | 3° | 2° | 0° | 21 | 149 | 129 |
| | | | | | 24 | 149 | 129 |
| | | | | | 27 | 148 | 130 |
| | | | | | 30 | 154 | 130 |
| | | | | 3° | 1/4 | 123 | 108 |
| | | | | | 3 | 126 | 108 |
| | | | | | 6 | 126 | 110 |
| | | | | | 9 | 126 | 108 |
| | | | | | 12 | 120 | 107 |
| | | | | | 15 | 126 | 109 |
| | | | | | 18 | 126 | 110 |
| | | | | | 21 | 128 | 110 |
| | | | | | 24 | 130 | 108 |
| | | | | | 27 | 131 | 109 |
| | | | | | 30 | 130 | 108 |
| | | | | 18° | 1/4 | 134 | 109 |
| | | | | | 3 | 135 | 111 |
| | | | | | 6 | 135 | 111 |
| | | | | | 9 | 135 | 111 |
| | | | | | 12 | 135 | 111 |
| | | | | | 15 | 135 | 110 |
| | | | | | 18 | 134 | 111 |
| | | | | | 21 | 133 | 111 |
| | | | | | 24 | 134 | 111 |
| | | | | | 27 | 133 | 111 |
| | | | | | 30 | 134 | 111 |

## WILDWOOD

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 2/16/66 to 5/13/66 | 0° | 3° | 1° | 0° | 1/2 | 1191 | 1449 |
| | | | | | 1 | 356 | 438 |
| | | | | | 2 | 341 | 420 |
| | | | | | 3 | 328 | 413 |
| | | | | | 4 | 332 | 412 |
| | | | | | 5 | 327 | 410 |
| | | | | | 6 | 326 | 401 |
| | | | | | 7 | 323 | 399 |
| | | | | | 8 | 313 | 394 |
| | | | | | 9 | 316 | 392 |
| | | | | | 10 | 319 | 393 |
| | | | | 3° | 1/2 | 257 | 305 |
| | | | | | 1 | 261 | 309 |
| | | | | | 2 | 260 | 310 |
| | | | | | 3 | 266 | 318 |
| | | | | | 4 | 266 | 317 |
| | | | | | 5 | 265 | 317 |
| | | | | | 6 | 267 | 320 |
| | | | | | 7 | 267 | 320 |
| | | | | | 8 | 261 | 316 |
| | | | | | 9 | 264 | 319 |
| | | | | | 10 | 268 | 321 |
| | | | | 6° | 1/2 | 262 | 307 |
| | | | | | 1 | 258 | 307 |
| | | | | | 2 | 260 | 310 |
| | | | | | 3 | 261 | 310 |
| | | | | | 4 | 259 | 309 |
| | | | | | 5 | 259 | 312 |
| | | | | | 6 | 260 | 314 |
| | | | | | 7 | 260 | 315 |
| | | | | | 8 | 254 | 311 |
| | | | | | 9 | 256 | 312 |
| | | | | | 10 | 260 | 314 |

TABLE 2

Table 2 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 5/13/66 to 6/7/66 | 0° | 6° | 1° | 0° | 1/2 | 670 | 673 |
| | | | | | 1 | 186 | 186 |
| | | | | | 2 | 182 | 185 |
| | | | | | 3 | 179 | 184 |
| | | | | | 4 | 183 | 185 |
| | | | | | 5 | 180 | 184 |
| | | | | | 6 | 180 | 184 |
| | | | | | 7 | 174 | 183 |
| | | | | | 8 | 172 | 182 |
| | | | | | 9 | 173 | 181 |
| | | | | | 10 | 170 | 181 |
| | | | | 3° | 1/2 | 158 | 158 |
| | | | | | 1 | 158 | 158 |
| | | | | | 2 | 158 | 158 |
| | | | | | 3 | 158 | 159 |
| | | | | | 4 | 159 | 159 |
| | | | | | 5 | 158 | 159 |
| | | | | | 6 | 157 | 159 |
| | | | | | 7 | 156 | 158 |
| | | | | | 8 | 153 | 159 |
| | | | | | 9 | 156 | 159 |
| | | | | | 10 | 154 | 158 |
| | | | | 6° | 1/2 | 159 | 160 |
| | | | | | 1 | 159 | 161 |
| | | | | | 2 | 160 | 161 |
| | | | | | 3 | 160 | 162 |
| | | | | | 4 | 160 | 162 |
| | | | | | 5 | 160 | 162 |
| | | | | | 6 | 160 | 162 |
| | | | | | 7 | 162 | 164 |
| | | | | | 8 | 161 | 164 |
| | | | | | 9 | 162 | 165 |
| | | | | | 10 | 162 | 165 |

Table 2 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 6/7/66 to 8/17/66 | 0° | 6° | 2° | 0° | 1/2 | 934 | 1374 |
| | | | | | 1 | 246 | 356 |
| | | | | | 2 | 239 | 356 |
| | | | | | 3 | 235 | 355 |
| | | | | | 4 | 235 | 356 |
| | | | | | 5 | 236 | 358 |
| | | | | | 6 | 234 | 355 |
| | | | | | 7 | 230 | 353 |
| | | | | | 8 | 223 | 355 |
| | | | | | 9 | 229 | 360 |
| | | | | | 10 | 225 | 359 |
| | | | | 9° | 1/2 | 221 | 326 |
| | | | | | 1 | 222 | 321 |
| | | | | | 2 | 221 | 326 |
| | | | | | 3 | 218 | 326 |
| | | | | | 4 | 223 | 329 |
| | | | | | 5 | 222 | 328 |
| | | | | | 6 | 221 | 331 |
| | | | | | 7 | 223 | 327 |
| | | | | | 8 | 220 | 325 |
| | | | | | 9 | 220 | 327 |
| | | | | | 10 | 219 | 327 |
| | | | | 12° | 1/2 | 219 | 323 |
| | | | | | 1 | 219 | 326 |
| | | | | | 2 | 221 | 328 |
| | | | | | 3 | 222 | 329 |
| | | | | | 4 | 221 | 330 |
| | | | | | 5 | 224 | 332 |
| | | | | | 6 | 222 | 333 |
| | | | | | 7 | 220 | 333 |
| | | | | | 8 | 225 | 330 |
| | | | | | 9 | 223 | 332 |
| | | | | | 10 | 225 | 334 |

Table 2 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 8/19/66 to 12/14/66 | 0° | 3° | 2° | 0° | 1/2 | 980 | 1130 |
| | | | | | 2 | 246 | 291 |
| | | | | | 4 | 230 | 289 |
| | | | | | 6 | 222 | 290 |
| | | | | | 8 | 221 | 292 |
| | | | | | 10 | 216 | 288 |
| | | | | | 12 | 229 | 286 |
| | | | | | 14 | 223 | 289 |
| | | | | | 16 | 225 | 293 |
| | | | | | 18 | 232 | 289 |
| | | | | | 20 | 230 | 291 |
| | | | | 12° | 1/2 | 207 | 238 |
| | | | | | 2 | 213 | 245 |
| | | | | | 4 | 212 | 243 |
| | | | | | 6 | 205 | 248 |
| | | | | | 8 | 215 | 252 |
| | | | | | 10 | 208 | 250 |
| | | | | | 12 | 214 | 252 |
| | | | | | 14 | 210 | 249 |
| | | | | | 16 | 209 | 249 |
| | | | | | 18 | 206 | 250 |
| | | | | | 20 | 207 | 249 |
| | | | | 18° | 1/2 | 212 | 250 |
| | | | | | 2 | 216 | 252 |
| | | | | | 4 | 219 | 247 |
| | | | | | 6 | 218 | 251 |
| | | | | | 8 | 219 | 258 |
| | | | | | 10 | 218 | 259 |
| | | | | | 12 | 217 | 258 |
| | | | | | 14 | 217 | 259 |
| | | | | | 16 | 216 | 259 |
| | | | | | 18 | 221 | 255 |
| | | | | | 20 | 219 | 258 |

Table 2 (Cont'd)

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 12/14/66 to 1/16/67 | 0 | 3° | 1° | 0° | 1/2 | | 571 |
| | | | | | 2 | | 156 |
| | | | | | 4 | | 154 |
| | | | | | 6 | | 151 |
| | | | | | 8 | | 150 |
| | | | | | 10 | | 150 |
| | | | | | 12 | | 154 |
| | | | | | 14 | | 151 |
| | | | | | 16 | | 152 |
| | | | | | 18 | | 154 |
| | | | | | 20 | | 152 |
| | | | | 12° | 1/2 | | 134 |
| | | | | | 2 | | 133 |
| | | | | | 4 | | 134 |
| | | | | | 6 | | 135 |
| | | | | | 8 | | 138 |
| | | | | | 10 | | 138 |
| | | | | | 12 | | 138 |
| | | | | | 14 | | 137 |
| | | | | | 16 | | 136 |
| | | | | | 18 | | 137 |
| | | | | | 20 | | 136 |
| | | | | 18° | 1/2 | | 137 |
| | | | | | 2 | | 135 |
| | | | | | 4 | | 138 |
| | | | | | 6 | | 138 |
| | | | | | 8 | | 138 |
| | | | | | 10 | | 138 |
| | | | | | 12 | | 137 |
| | | | | | 14 | | 137 |
| | | | | | 16 | | 138 |
| | | | | | 18 | | 138 |
| | | | | | 20 | | 139 |

## WALLOPS ISLAND

| Time Period | Receiving Ant. Configuration On-Path Elev. | Az. | Off-Path Elev. | TX Ant. Configuration Az. | Elev. | Number of On-Path Samples | Number of Off-Path Samples |
|---|---|---|---|---|---|---|---|
| 1/24/67 to 2/16/67 | 0° | 3° | 1/2° | 0° | 1/4 | 316 | 643 |
| | | | | | 3 | 73 | 177 |
| | | | | | 6 | 80 | 176 |
| | | | | | 9 | 86 | 179 |
| | | | | | 12 | 89 | 179 |
| | | | | | 15 | 90 | 179 |
| | | | | | 18 | 86 | 178 |
| | | | | | 21 | 90 | 176 |
| | | | | | 24 | 90 | 175 |
| | | | | | 27 | 90 | 175 |
| | | | | | 30 | 89 | 174 |
| | | | | 3° | 1/4 | 75 | 149 |
| | | | | | 3 | 77 | 150 |
| | | | | | 6 | 76 | 150 |
| | | | | | 9 | 76 | 153 |
| | | | | | 12 | 77 | 152 |
| | | | | | 15 | 76 | 155 |
| | | | | | 18 | 76 | 154 |
| | | | | | 21 | 77 | 153 |
| | | | | | 24 | 78 | 153 |
| | | | | | 27 | 78 | 154 |
| | | | | | 30 | 78 | 152 |
| | | | | 18° | 1/4 | 78 | 157 |
| | | | | | 3 | 78 | 155 |
| | | | | | 6 | 78 | 155 |
| | | | | | 9 | 78 | 156 |
| | | | | | 12 | 76 | 157 |
| | | | | | 15 | 77 | 156 |
| | | | | | 18 | 77 | 157 |
| | | | | | 21 | 76 | 155 |
| | | | | | 24 | 76 | 156 |
| | | | | | 27 | 76 | 155 |
| | | | | | 30 | 76 | 153 |

TABLE 3

ANNEX A

Probability Distributions

| Figure | Location | Receiver | TX Ant. Az. (degrees) | TX Ant. Elev. (degrees) | Date |
|---|---|---|---|---|---|
| A-1 | NAFEC | On-Path | 0 | 1/2,6,12 | 5/13/66-2/16/67 |
| A-2 | NAFEC | On | 0 | 1,7,15 | 5/13/66-2/16/67 |
| A-3 | NAFEC | On | 0 | 2,8,16 | 5/13/66-2/16/67 |
| A-4 | NAFEC | On | 0 | 3,9,18 | 5/13/66-2/16/67 |
| A-5 | NAFEC | On | 0 | 4,14 | 5/13/66-2/16/67 |
| A-6 | NAFEC | On | 0 | 1/2,1,2,10 | 5/13/66-8/16/66 |
| A-7 | NAFEC | On | 0 | 3,6,8 | 5/13/66-8/16/66 |
| A-8 | NAFEC | On | 0 | 4,9 | 5/13/66-8/16/66 |
| A-9 | NAFEC | On | 0 | 5,7 | 5/13/66-8/16/66 |
| A-10 | NAFEC | On | 3 | 1,6 | 5/13/66-6/7/66 |
| A-11 | NAFEC | On | 3 | 2,7 | 5/13/66-6/7/66 |
| A-12 | NAFEC | On | 3 | 3,8 | 5/13/66-6/7/66 |
| A-13 | NAFEC | On | 3 | 4,9 | 5/13/66-6/7/66 |
| A-14 | NAFEC | On | 6 | 1,9 | 5/13/66-6/7/66 |
| A-15 | NAFEC | On | 6 | 2,8 | 5/13/66-6/7/66 |
| A-16 | NAFEC | On | 6 | 3 | 5/13/66-6/7/66 |
| A-17 | NAFEC | On | 6 | 4,5 | 5/13/66-6/7/66 |
| A-18 | NAFEC | On | 6 | 6 | 5/13/66-6/7/66 |
| A-19 | NAFEC | On | 9 | 1,6 | 6/7/66-8/16/66 |
| A-20 | NAFEC | On | 9 | 2,4 | 6/7/66-8/16/66 |
| A-21 | NAFEC | On | 9 | 3,9 | 6/7/66-8/16/66 |
| A-22 | NAFEC | On | 9 | 7 | 6/7/66-8/16/66 |
| A-23 | NAFEC | On | 9 | 8 | 6/7/66-8/16/66 |
| A-24 | NAFEC | On | 12 | 1,2,3 | 6/7/66-8/16/66 |
| A-25 | NAFEC | On | 12 | 4,10 | 6/7/66-8/16/66 |
| A-26 | NAFEC | On | 12 | 5,7,8 | 6/7/66-8/16/66 |
| A-27 | NAFEC | On | 0 | 1/2,10,20 | 8/19/66-11/25/66 |
| A-28 | NAFEC | On | 0 | 2,8,16 | 8/19/66-11/25/66 |
| A-29 | NAFEC | On | 0 | 4,12,18 | 8/19/66-11/25/66 |
| A-30 | NAFEC | On | 0 | 6,14 | 8/19/66-11/25/66 |
| A-31 | NAFEC | On | 12 | 2,12,16 | 8/19/66-11/25/66 |
| A-32 | NAFEC | On | 12 | 6,14 | 8/19/66-11/25-66 |
| A-33 | NAFEC | On | 12 | 8 | 8/19/66-11/25/66 |
| A-34 | NAFEC | On | 12 | 10,20 | 8/19/66-11/25/66 |
| A-35 | NAFEC | On | 18 | 2,10 | 8/19/66-11/25/66 |
| A-36 | NAFEC | On | 18 | 4,16 | 8/19/66-11/25/66 |

Annex A (cont'd)

| Figure | Location | Receiver | TX Ant. Az. (degrees) | TX Ant. Elev. (degrees) | Date |
|---|---|---|---|---|---|
| A-37 | NAFEC | On-Path | 18 | 6,14 | 8/19/66-11/25/66 |
| A-38 | NAFEC | On | 18 | 8,20 | 8/19/66-11/25/66 |
| A-39 | NAFEC | On | 18 | 12 | 8/19/66-11/25/66 |
| A-40 | NAFEC | On | 0 | 1/4,15,24 | 1/24/67-2/16/67 |
| A-41 | NAFEC | On | 0 | 3,12,18 | 1/24/67-2/16/67 |
| A-42 | NAFEC | On | 0 | 6,21 | 1/24/67-2/16/67 |
| A-43 | NAFEC | On | 3 | 3,6 | 1/24/67-2/16/67 |
| A-44 | NAFEC | On | 3 | 9,12,24 | 1/24/67-2/16/67 |
| A-45 | NAFEC | On | 3 | 18,21,27 | 1/24/67-2/16/67 |
| A-46 | NAFEC | On | 18 | 3,27 | 1/24/67-2/16/67 |
| A-47 | NAFEC | On | 18 | 6,21 | 1/24/67-2/16/67 |
| A-48 | NAFEC | On | 18 | 9,12 | 1/24/67-2/16/67 |
| A-49 | NAFEC | On | 18 | 18,24,30 | 1/24/67-2/16/67 |
| A-50 | NAFEC | Off-Path | 0 | 1,7 | 5/13/66-8/16/66 |
| A-51 | NAFEC | Off | 0 | 2,8 | 5/13/66-8/16/66 |
| A-52 | NAFEC | Off | 0 | 3,9 | 5/13/66-8/16/66 |
| A-53 | NAFEC | Off | 0 | 4,6 | 5/13/66-8/16/66 |
| A-54 | NAFEC | Off | 3 | 1/2,5,10 | 5/13/66-6/7/66 |
| A-55 | NAFEC | Off | 3 | 1,7 | 5/13/66-6/7/66 |
| A-56 | NAFEC | Off | 3 | 2,6 | 5/13/66-6/7/66 |
| A-57 | NAFEC | Off | 3 | 3,9 | 5/13/66-6/7/66 |
| A-58 | NAFEC | Off | 3 | 4,8 | 5/13/66-6/7/66 |
| A-59 | NAFEC | Off | 6 | 1/2,5,10 | 5/13/66-6/7/66 |
| A-60 | NAFEC | Off | 6 | 1,7 | 5/13/66-6/7/66 |
| A-61 | NAFEC | Off | 6 | 2,8 | 5/13/66-6/7/66 |
| A-62 | NAFEC | Off | 6 | 3,9 | 5/13/66-6/7/66 |
| A-63 | NAFEC | Off | 6 | 4,6 | 5/13/66-6/7/66 |
| A-64 | NAFEC | Off | 9 | 5,10 | 6/7/66-8/16/66 |
| A-65 | NAFEC | Off | 12 | 5,8 | 6/7/66-8/16/66 |
| A-66 | NAFEC | Off | 12 | 7 | 6/7/66-8/16/66 |
| A-67 | NAFEC | Off | 12 | 9 | 6/7/66-8/16/66 |
| A-68 | NAFEC | Off | 0 | 1/2,10 | 8/19/66-11/25/66 |
| A-69 | NAFEC | Off | 0 | 2,16 | 8/19/66-11/25/66 |
| A-70 | NAFEC | Off | 0 | 4,8 | 8/19/66-11/25/66 |
| A-71 | NAFEC | Off | 0 | 6,12 | 8/19/66-11/25/66 |
| A-72 | NAFEC | Off | 0 | 14 | 8/19/66-11/25/66 |
| A-73 | NAFEC | Off | 0 | 18,20 | 8/19/66-11/25/66 |
| A-74 | NAFEC | Off | 12 | 1/2,10 | 8/19/66-11/25/66 |
| A-75 | NAFEC | Off | 12 | 2,12 | 8/19/66-11/25/66 |
| A-76 | NAFEC | Off | 12 | 4,20 | 8/19/66-11/25/66 |
| A-77 | NAFEC | Off | 12 | 6,16 | 8/19/66-11/25/66 |
| A-78 | NAFEC | Off | 12 | 8,14,18 | 8/19/66-11/25/66 |
| A-79 | NAFEC | Off | 18 | 1/2,6,10 | 8/19/66-11/25/66 |
| A-80 | NAFEC | Off | 18 | 2,12,18 | 8/19/66-11/25/66 |
| A-81 | NAFEC | Off | 18 | 4,20 | 8/19/66-11/25/66 |
| A-82 | NAFEC | Off | 18 | 8,14,16 | 8/19/66-11/25/66 |
| A-83 | NAFEC | Off | 3 | 1/4,9 | 1/24/67-2/16/67 |
| A-84 | NAFEC | Off | 3 | 3,6 | 1/24/67-2/16/67 |

Annex A (cont'd)

| Figure | Location | Receiver | TX Ant. Az. (degrees) | TX Ant. Elev. (degrees) | Date |
|---|---|---|---|---|---|
| A-85 | Wildwood | On-Path | 0 | 1/2,6,7 | 2/16/66-5/13/66 |
| A-86 | Wildwood | On | 0 | 1/2,8 | 2/16/66-5/13/66 |
| A-87 | Wildwood | On | 0 | 1/2,9 | 2/16/66-5/13/66 |
| A-88 | Wildwood | On | 3 | 1/2,1,2 | 2/16/66-5/13/66 |
| A-89 | Wildwood | On | 3 | 3,4,5 | 2/16/66-5/13/66 |
| A-90 | Wildwood | On | 3 | 6,7 | 2/16/66-5/13/66 |
| A-91 | Wildwood | On | 3 | 8 | 2/16/66-5/13/66 |
| A-92 | Wildwood | On | 6 | 1/2,1,2 | 2/16/66-5/13/66 |
| A-93 | Wildwood | On | 6 | 3,4 | 2/16/66-5/13/66 |
| A-94 | Wildwood | On | 6 | 5,6 | 2/16/66-5/13/66 |
| A-95 | Wildwood | On | 6 | 7,8 | 2/16/66-5/13/66 |
| A-96 | Wildwood | On | 6 | 9 | 2/16/66-5/13/66 |
| A-97 | Wildwood | On | 0 | 1/2,6,7 | 5/13/66-6/7/66 |
| A-98 | Wildwood | On | 0 | 1/2,8 | 5/13/66-6/7/66 |
| A-99 | Wildwood | On | 0 | 1/2,9 | 5/13/66-6/7/66 |
| A-100 | Wildwood | On | 3 | 1/2,1,2 | 5/13/66-6/7/66 |
| A-101 | Wildwood | On | 3 | 3 | 5/13/66-6/7/66 |
| A-102 | Wildwood | On | 3 | 4,5 | 5/13/66-6/7/66 |
| A-103 | Wildwood | On | 3 | 6,7 | 5/13/66-6/7/66 |
| A-104 | Wildwood | On | 3 | 8 | 5/13/66-6/7/66 |
| A-105 | Wildwood | On | 6 | 1/2,1,2 | 5/13/66-6/7/66 |
| A-106 | Wildwood | On | 6 | 3 | 5/13/66-6/7/66 |
| A-107 | Wildwood | On | 6 | 4,5 | 5/13/66-6/7/66 |
| A-108 | Wildwood | On | 6 | 6,7 | 5/13/66-6/7/66 |
| A-109 | Wildwood | On | 6 | 8,9 | 5/13/66-6/7/66 |
| A-110 | Wildwood | On | 0 | 1/2,6,7 | 6/7/66-8/17/66 |
| A-111 | Wildwood | On | 0 | 1/2,8 | 6/7/66-8/17/66 |
| A-112 | Wildwood | On | 0 | 1/2,9 | 6/7/66-8/17/66 |
| A-113 | Wildwood | On | 9 | 1/2,1 | 6/7/66-8/17/66 |
| A-114 | Wildwood | On | 9 | 2 | 6/7/66-8/17/66 |
| A-115 | Wildwood | On | 9 | 3,4 | 6/7/66-8/17/66 |
| A-116 | Wildwood | On | 9 | 6,9 | 6/7/66-8/17/66 |
| A-117 | Wildwood | On | 9 | 7,8 | 6/7/66-8/17/66 |
| A-118 | Wildwood | On | 12 | 1,2,3 | 6/7/66-8/17/66 |
| A-119 | Wildwood | On | 12 | 4,5 | 6/7/66-8/17/66 |
| A-120 | Wildwood | On | 12 | 6 | 6/7/66-8/17/66 |
| A-121 | Wildwood | On | 12 | 7 | 6/7/66-8/17/66 |
| A-122 | Wildwood | On | 12 | 8,9 | 6/7/66-8/17/66 |
| A-123 | Wildwood | On | 0 | 1/2,8,10 | 8/19/66-12/14/66 |
| A-124 | Wildwood | On | 0 | 1/2,12 | 8/19/66-12/14/66 |
| A-125 | Wildwood | On | 0 | 1/2,14 | 8/19/66-12/14/66 |
| A-126 | Wildwood | On | 0 | 1/2,16,18 | 8/19/66-12/14/66 |
| A-127 | Wildwood | On | 12 | 2,4,18 | 8/19/66-12/14/66 |
| A-128 | Wildwood | On | 12 | 6,10 | 8/19/66-12/14/66 |
| A-129 | Wildwood | On | 12 | 8,14 | 8/19/66-12/14/66 |
| A-130 | Wildwood | On | 12 | 12,16 | 8/19/66-12/14/66 |
| A-131 | Wildwood | On | 18 | 4,16 | 8/19/66-12/14/66 |
| A-132 | Wildwood | On | 18 | 6 | 8/19/66-12/14/66 |
| A-133 | Wildwood | On | 18 | 8,12 | 8/19/66-12/14/66 |
| A-134 | Wildwood | On | 18 | 10,18 | 8/19/66-12/14/66 |
| A-135 | Wildwood | On | 18 | 14 | 8/19/66-12/14/66 |

Annex A (cont'd)

| Figure | Location | Receiver | TX Ant. Az. (degrees) | TX Ant. Elev. (degrees) | Date |
|---|---|---|---|---|---|
| A-136 | Wildwood | Off-Path | 0 | 1,8 | 2/16/66-5/13/66 |
| A-137 | Wildwood | Off | 0 | 2,3 | 2/16/66-5/13/66 |
| A-138 | Wildwood | Off | 0 | 4,6 | 2/16/66-5/13/66 |
| A-139 | Wildwood | Off | 0 | 5,7,9 | 2/16/66-5/13/66 |
| A-140 | Wildwood | Off | 3 | 1/2,7 | 2/16/66-5/13/66 |
| A-141 | Wildwood | Off | 3 | 1/2,8 | 2/16/66-5/13/66 |
| A-142 | Wildwood | Off | 3 | 1/2,9 | 2/16/66-5/13/66 |
| A-143 | Wildwood | Off | 6 | 1/2,10 | 2/16/66-5/13/66 |
| A-144 | Wildwood | Off | 6 | 1,3,9 | 2/16/66-5/13/66 |
| A-145 | Wildwood | Off | 6 | 2,4,8 | 2/16/66-5/13/66 |
| A-146 | Wildwood | Off | 6 | 5,7 | 2/16/66-5/13/66 |
| A-147 | Wildwood | Off | 6 | 6 | 2/16/66-5/13/66 |
| A-148 | Wildwood | Off | 0 | 3,10 | 5/13/66-6/7/66 |
| A-149 | Wildwood | Off | 0 | 4,9 | 5/13/66-6/7/66 |
| A-150 | Wildwood | Off | 0 | 5,8 | 5/13/66-6/7/66 |
| A-151 | Wildwood | Off | 0 | 6,7 | 5/13/66-6/7/66 |
| A-152 | Wildwood | Off | 3 | 1/2,1,10 | 5/13/66-6/7/66 |
| A-153 | Wildwood | Off | 3 | 2,4 | 5/13/66-6/7/66 |
| A-154 | Wildwood | Off | 3 | 3,5 | 5/13/66-6/7/66 |
| A-155 | Wildwood | Off | 3 | 6,7 | 5/13/66-6/7/66 |
| A-156 | Wildwood | Off | 3 | 8 | 5/13/66-6/7/66 |
| A-157 | Wildwood | Off | 3 | 9 | 5/13/66-6/7/66 |
| A-158 | Wildwood | Off | 6 | 1/2,1,3 | 5/13/66-6/7/66 |
| A-159 | Wildwood | Off | 6 | 2,9 | 5/13/66-6/7/66 |
| A-160 | Wildwood | Off | 6 | 4,10 | 5/13/66-6/7/66 |
| A-161 | Wildwood | Off | 6 | 5,8 | 5/13/66-6/7/66 |
| A-162 | Wildwood | Off | 6 | 6,7 | 5/13/66-6/7/66 |
| A-163 | Wildwood | Off | 0 | 2,3,5 | 6/7/66-8/17/66 |
| A-164 | Wildwood | Off | 0 | 6,7 | 6/7/66-8/17/66 |
| A-165 | Wildwood | Off | 0 | 8 | 6/7/66-8/17/66 |
| A-166 | Wildwood | Off | 0 | 9 | 6/7/66-8/17/66 |
| A-167 | Wildwood | Off | 9 | 1/2,1,10 | 6/7/66-8/17/66 |
| A-168 | Wildwood | Off | 9 | 2,9 | 6/7/66-8/17/66 |
| A-169 | Wildwood | Off | 9 | 5,7 | 6/7/66-8/17/66 |
| A-170 | Wildwood | Off | 12 | 1,5 | 6/7/66-8/17/66 |
| A-171 | Wildwood | Off | 12 | 2,6 | 6/7/66-8/17/66 |
| A-172 | Wildwood | Off | 12 | 7,8 | 6/7/66-8/17/66 |
| A-173 | Wildwood | Off | 0 | 4,16 | 8/19/66-12/14/66 |
| A-174 | Wildwood | Off | 0 | 6,12 | 8/19/66-12/14/66 |
| A-175 | Wildwood | Off | 0 | 8,14 | 8/19/66-12/14/66 |
| A-176 | Wildwood | Off | 0 | 10,18 | 8/19/66-12/14/66 |
| A-177 | Wildwood | Off | 12 | 1/2,8,20 | 8/19/66-12/14/66 |
| A-178 | Wildwood | Off | 12 | 2,10,18 | 8/19/66-12/14/66 |
| A-179 | Wildwood | Off | 12 | 4,12,16 | 8/19/66-12/14/66 |
| A-180 | Wildwood | Off | 12 | 6,14 | 8/19/66-12/14/66 |
| A-181 | Wildwood | Off | 18 | 4,20 | 8/19/66-12/14/66 |
| A-182 | Wildwood | Off | 18 | 6,18 | 8/19/66-12/14/66 |
| A-183 | Wildwood | Off | 18 | 2,12 | 8/19/66-12/14/66 |

Annex A (cont'd)

| Figure | Location | Receiver | TX Ant. Az. (degrees) | TX Ant. Elev. (degrees) | Date |
|---|---|---|---|---|---|
| A-184 | Wallops Isl. | On-Path | 3 | 1/4 | 1/24/67-2/16/67 |
| A-185 | Wallops Isl. | On | 18 | 1/4,18,21 | 1/24/67-2/16/67 |
| A-186 | Wallops Isl. | Off-Path | 0 | 1/4,3 | 1/24/67-2/16/67 |
| A-187 | Wallops Isl. | Off | 0 | 9,21,30 | 1/24/67-2/16/67 |
| A-188 | Wallops Isl. | Off | 3 | 30 | 1/24/67-2/16/67 |
| A-189 | Wallops Isl. | Off | 18 | 3,18 | 1/24/67-2/16/67 |
| A-190 | Wallops Isl. | Off | 18 | 6,24 | 1/24/67-2/16/67 |
| A-191 | Wallops Isl. | Off | 18 | 9,27 | 1/24/67-2/16/67 |
| A-192 | Wallops Isl. | Off | 18 | 12,21 | 1/24/67-2/16/67 |
| A-193 | Wallops Isl. | Off | 18 | 30 | 1/24/67-2/16/67 |

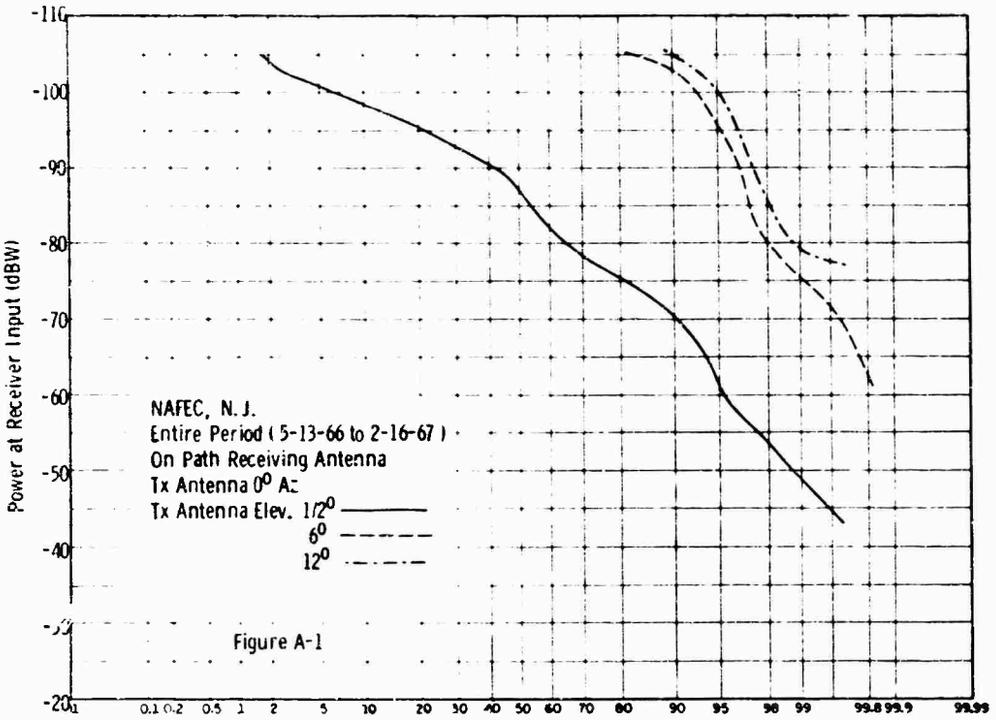



Figure A-1

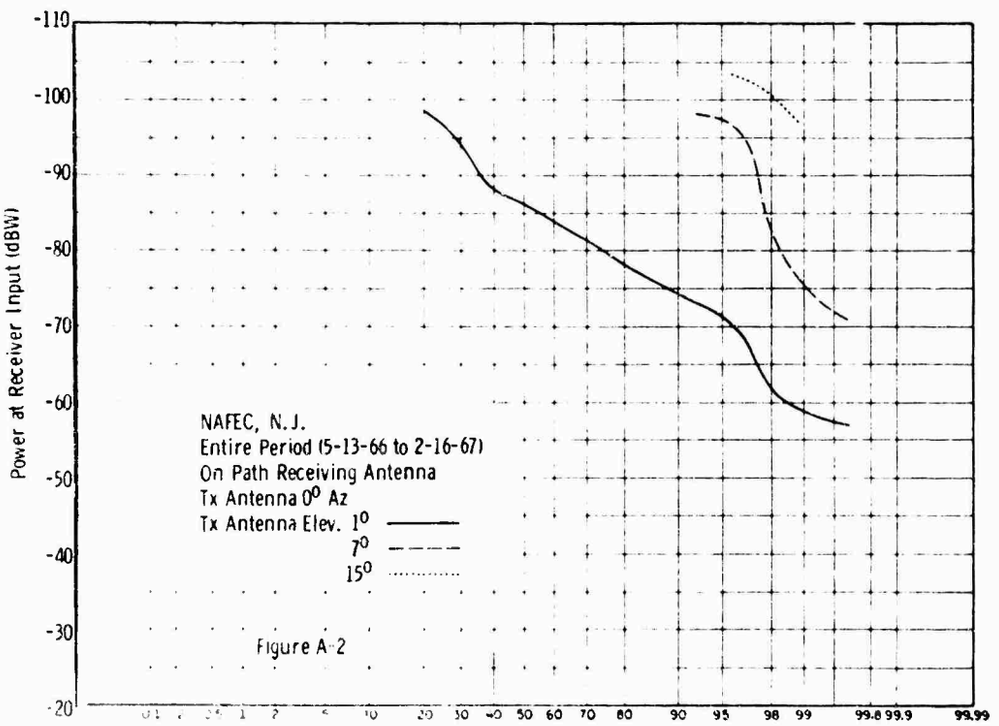
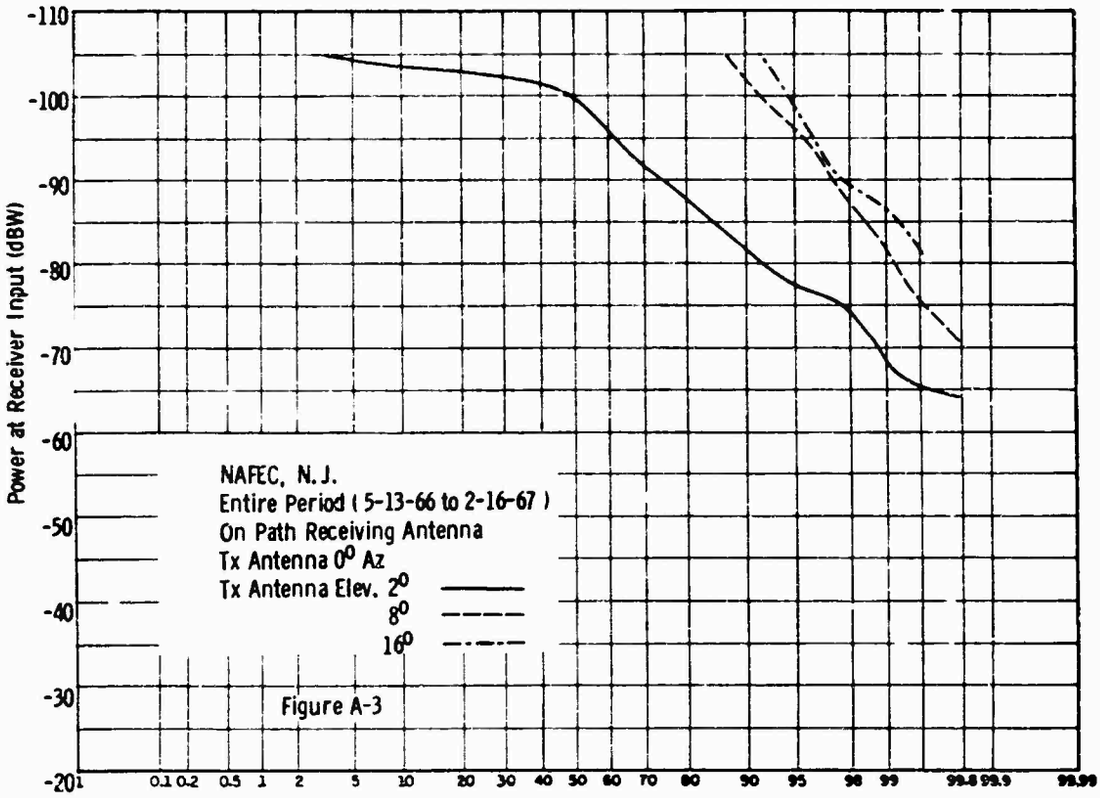
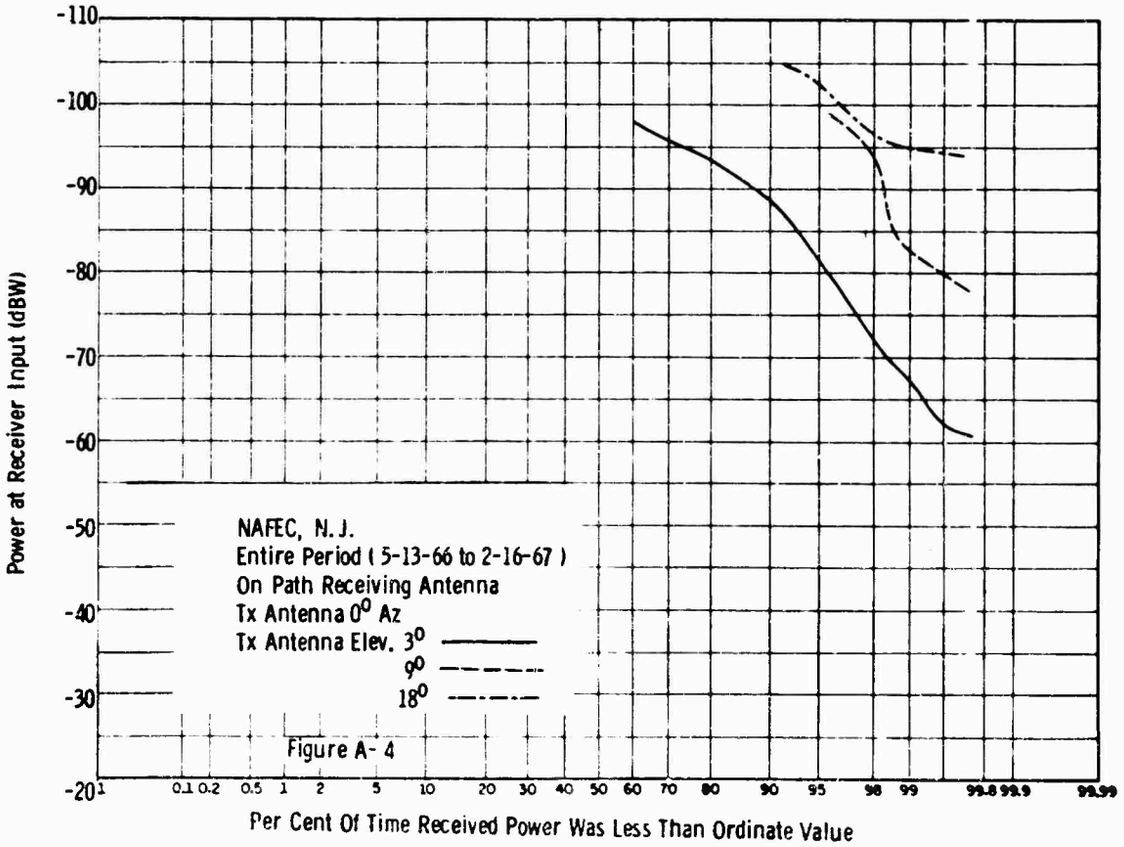



Figure A-2


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
Entire Period ( 5-13-66 to 2-16-67 )
On Path Receiving Antenna
Tx Antenna 0° Az
Tx Antenna Elev. 2°
8°
16°
Figure A-3
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
Entire Period ( 5-13-66 to 2-16-67 )
On Path Receiving Antenna
Tx Antenna 0° Az
Tx Antenna Elev. 3°
9°
18°
Figure A-4
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

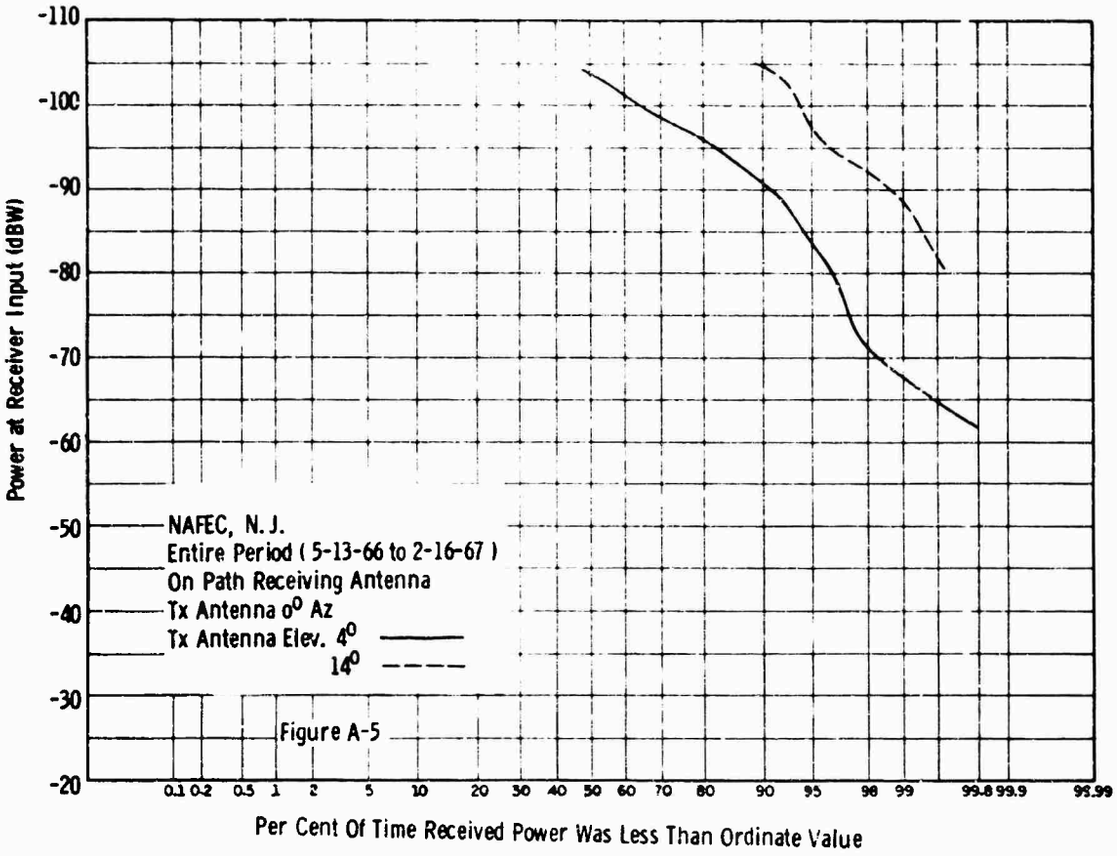



Figure A-5

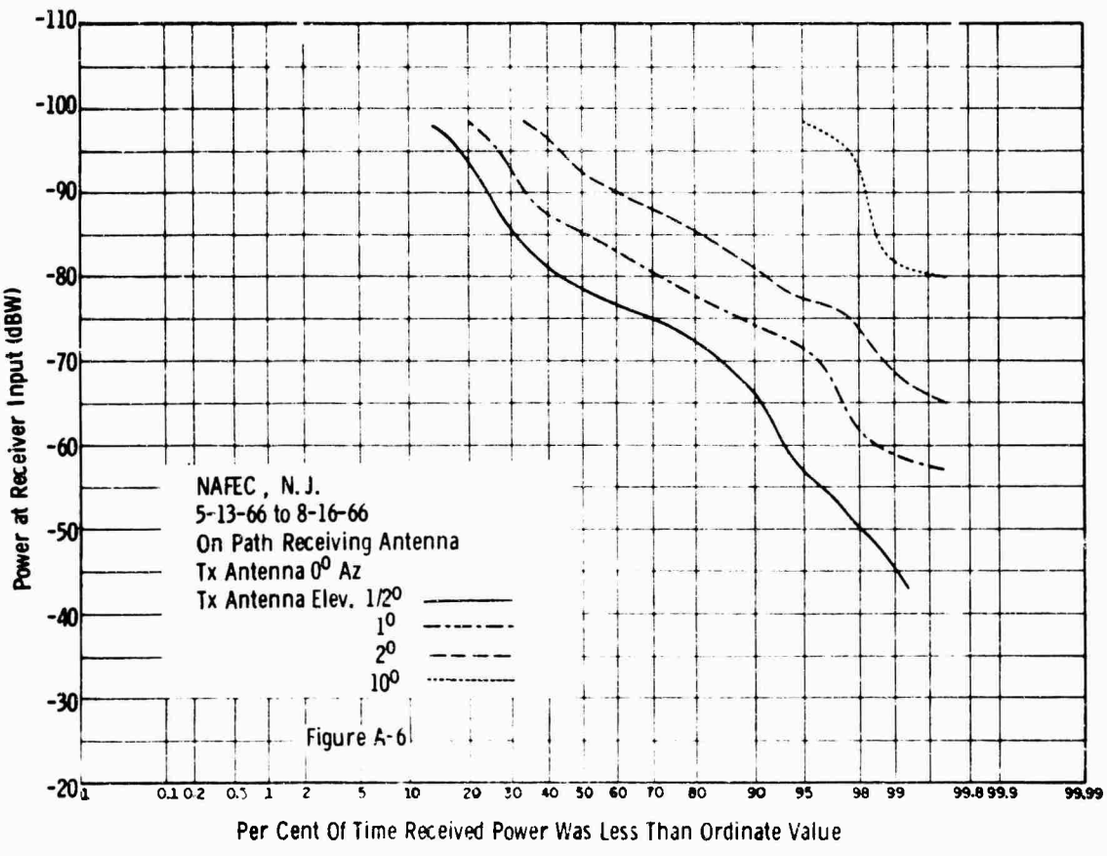
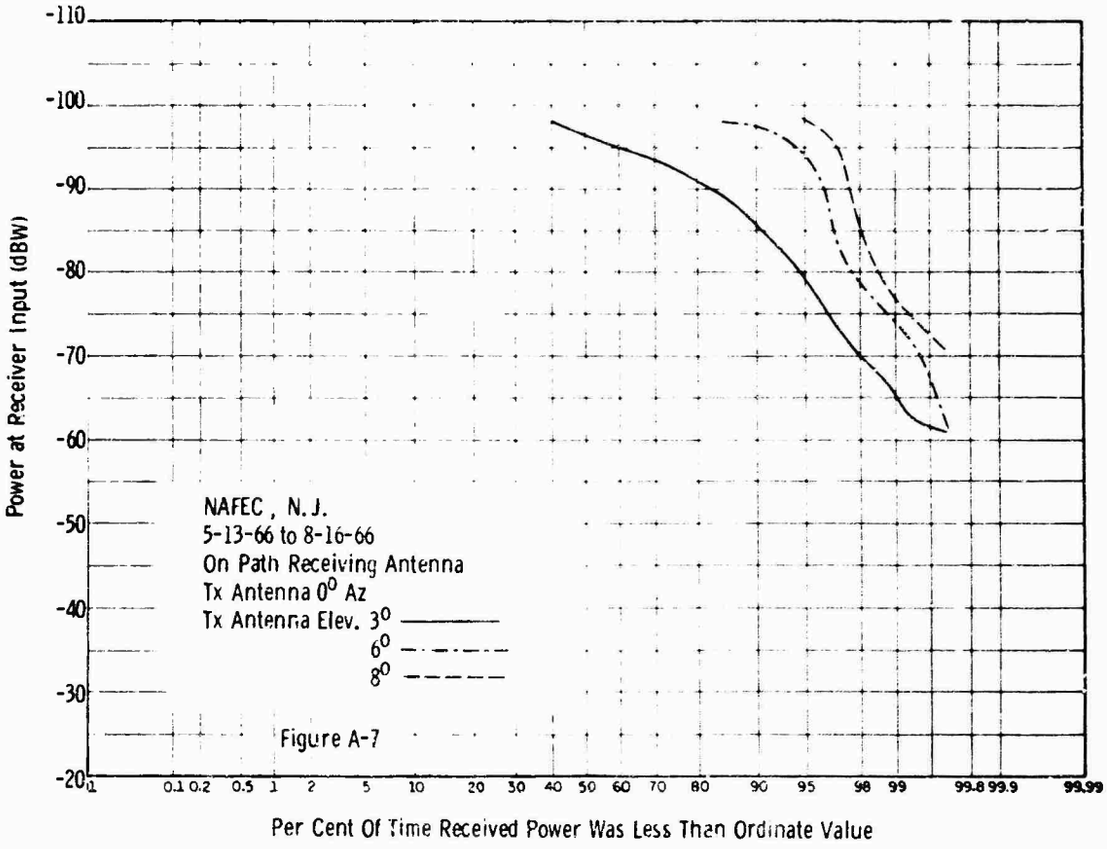
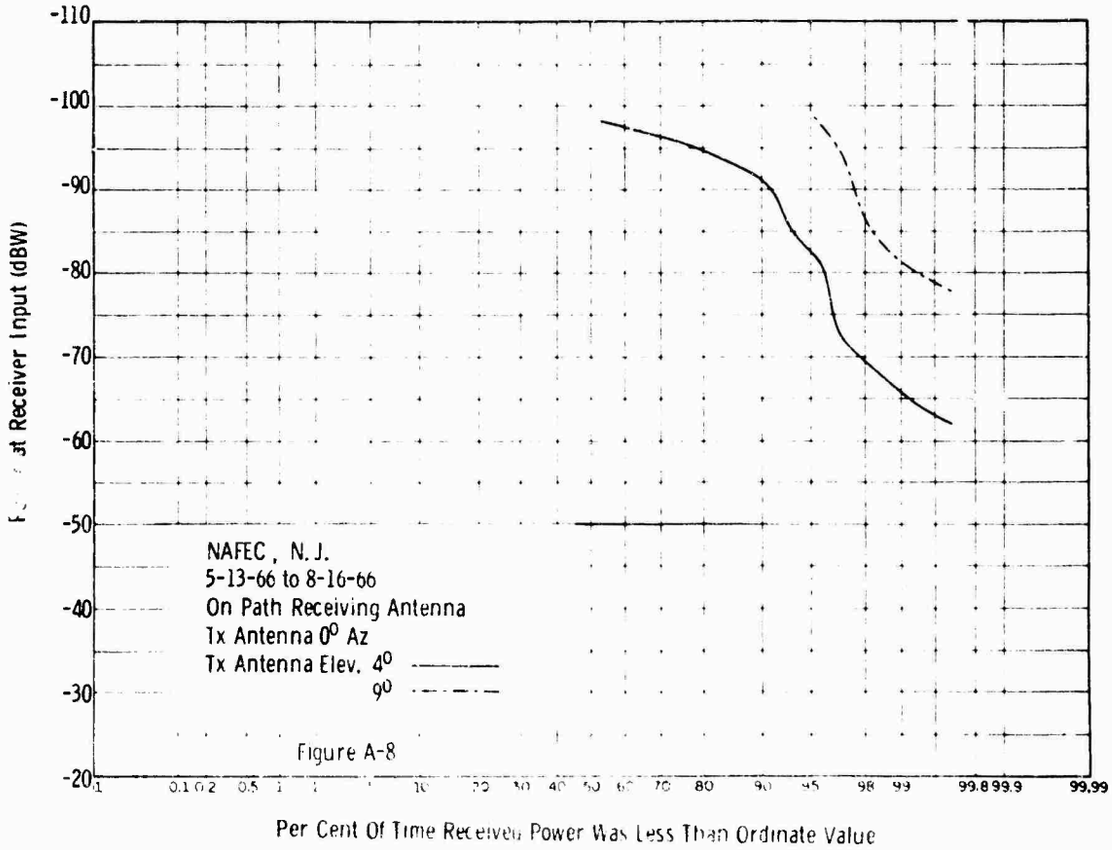



Figure A-6


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC , N. J.
5-13-66 to 8-16-66
On Path Receiving Antenna
Tx Antenna 0° Az
Tx Antenna Elev. 3°
6°
8°
Figure A-7
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
NAFEC , N. J.
5-13-66 to 8-16-66
On Path Receiving Antenna
Tx Antenna 0° Az
Tx Antenna Elev. 4°
9°
Figure A-8
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

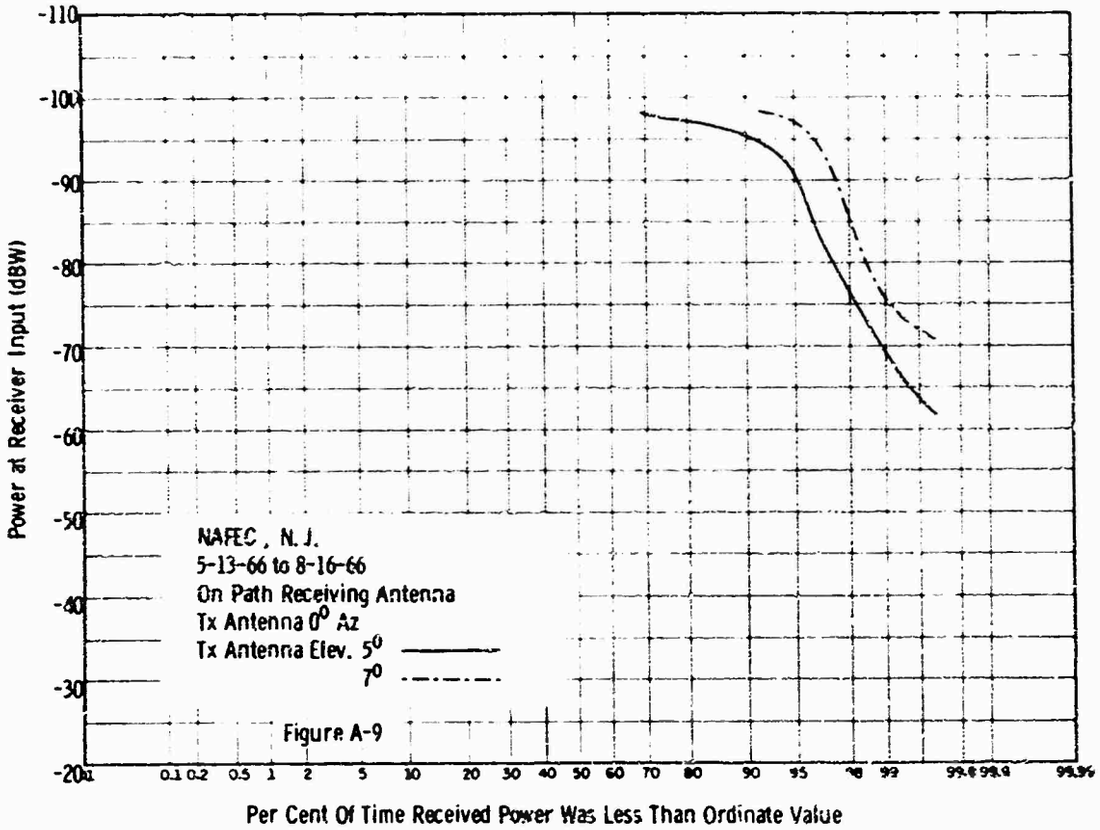



Figure A-9

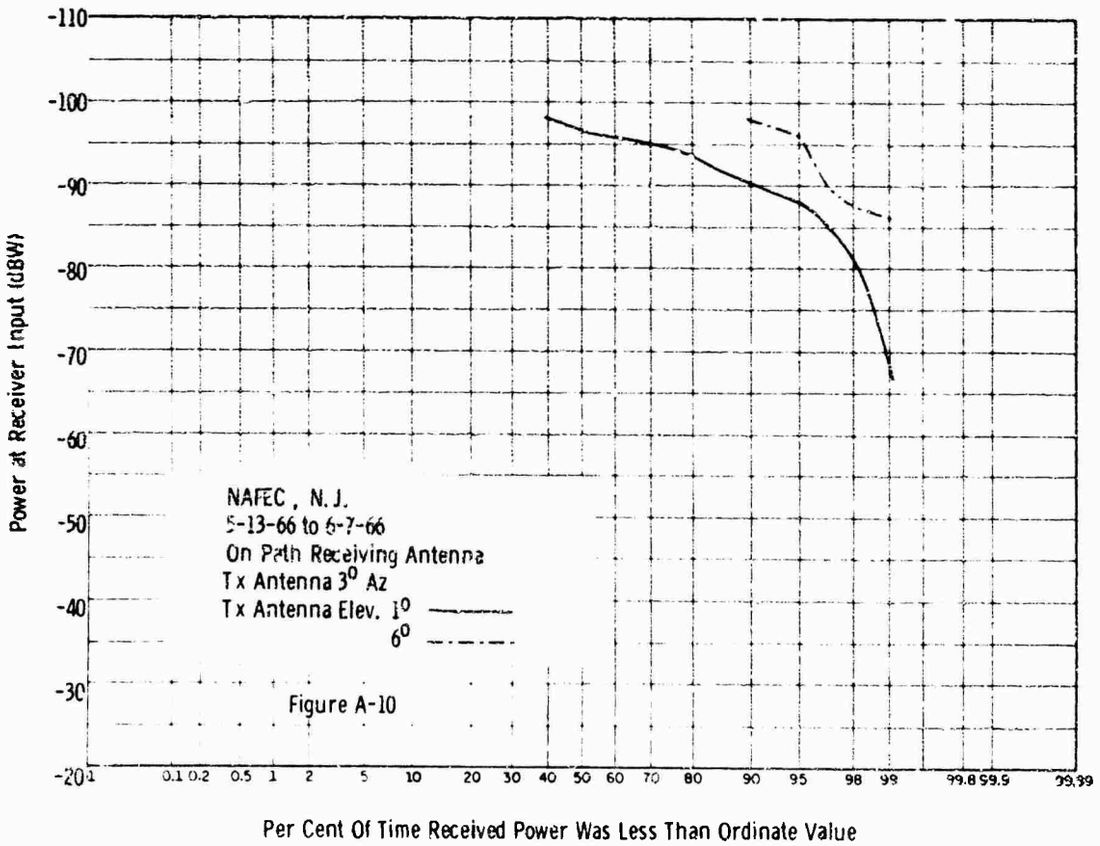



Figure A-10

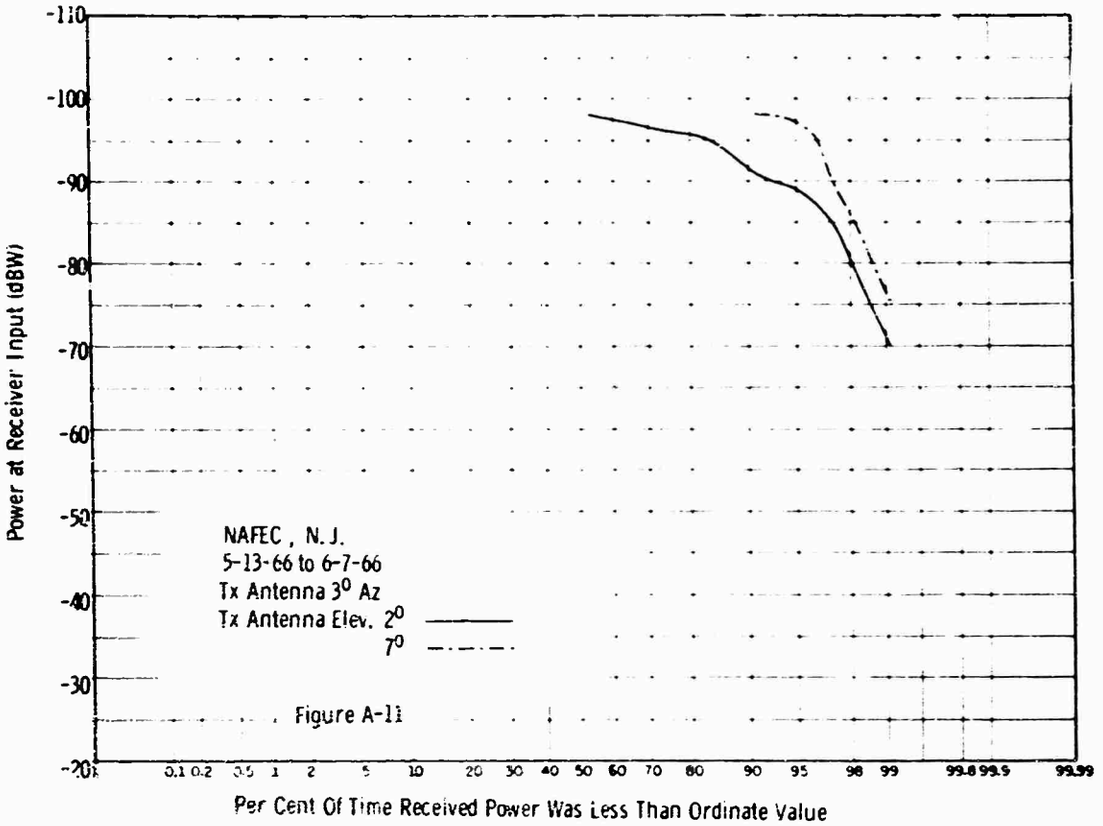



Figure A-11

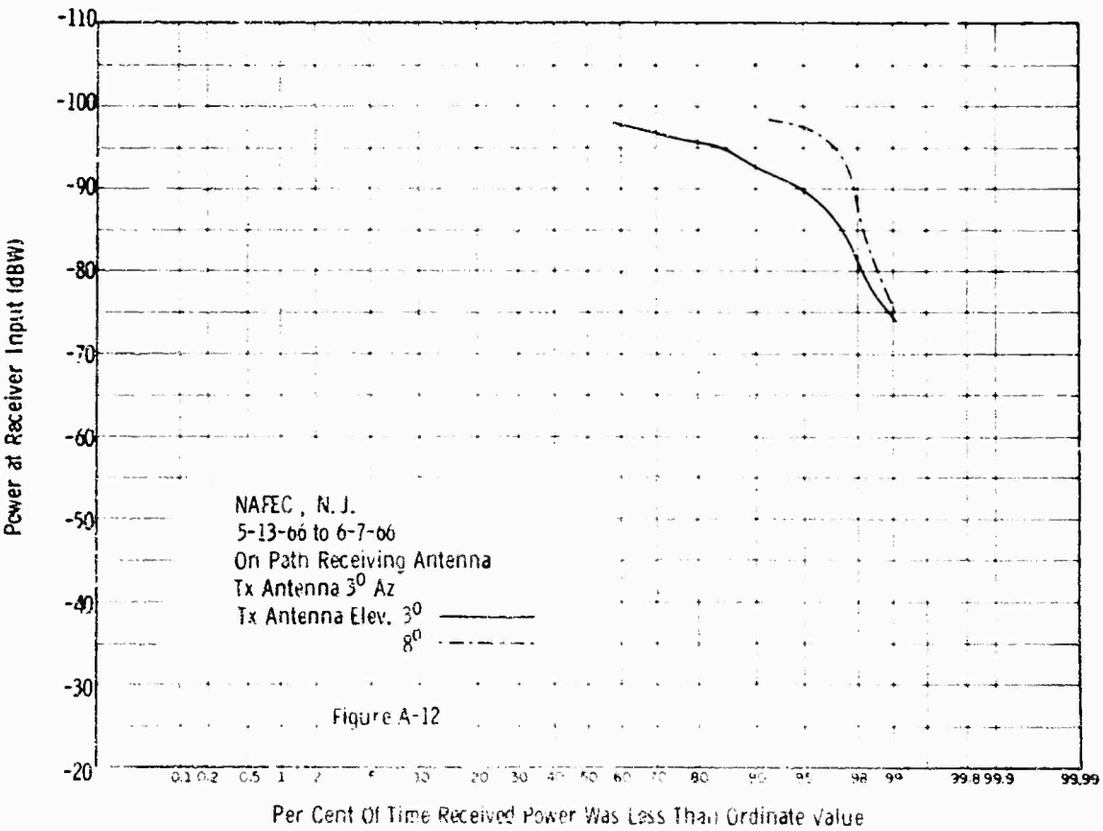



Figure A-12

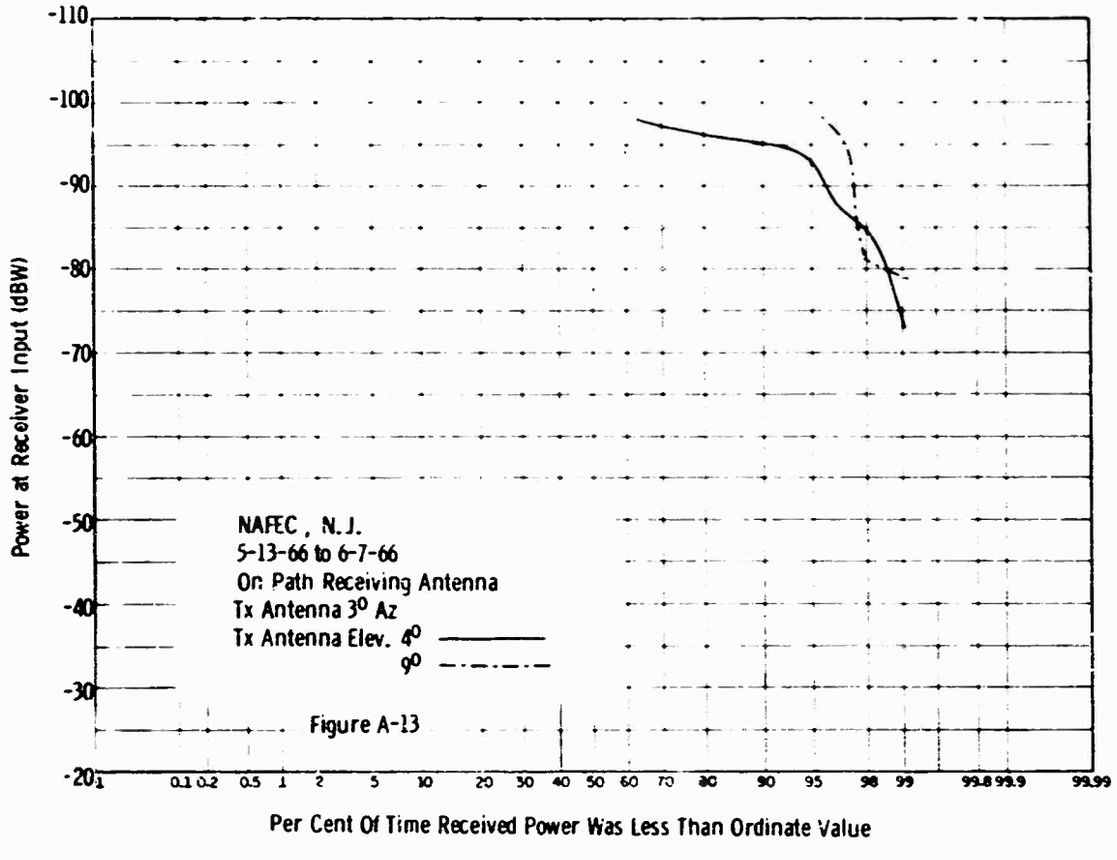



Figure A-13

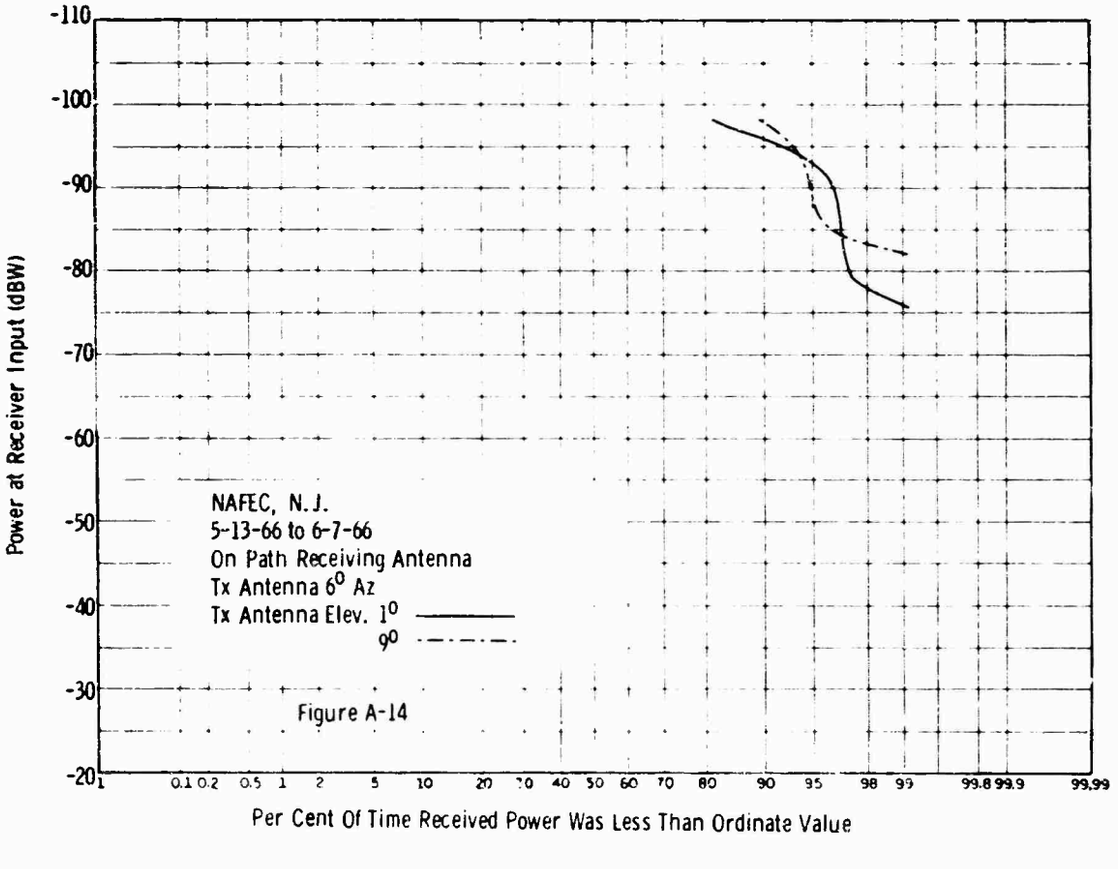



Figure A-14

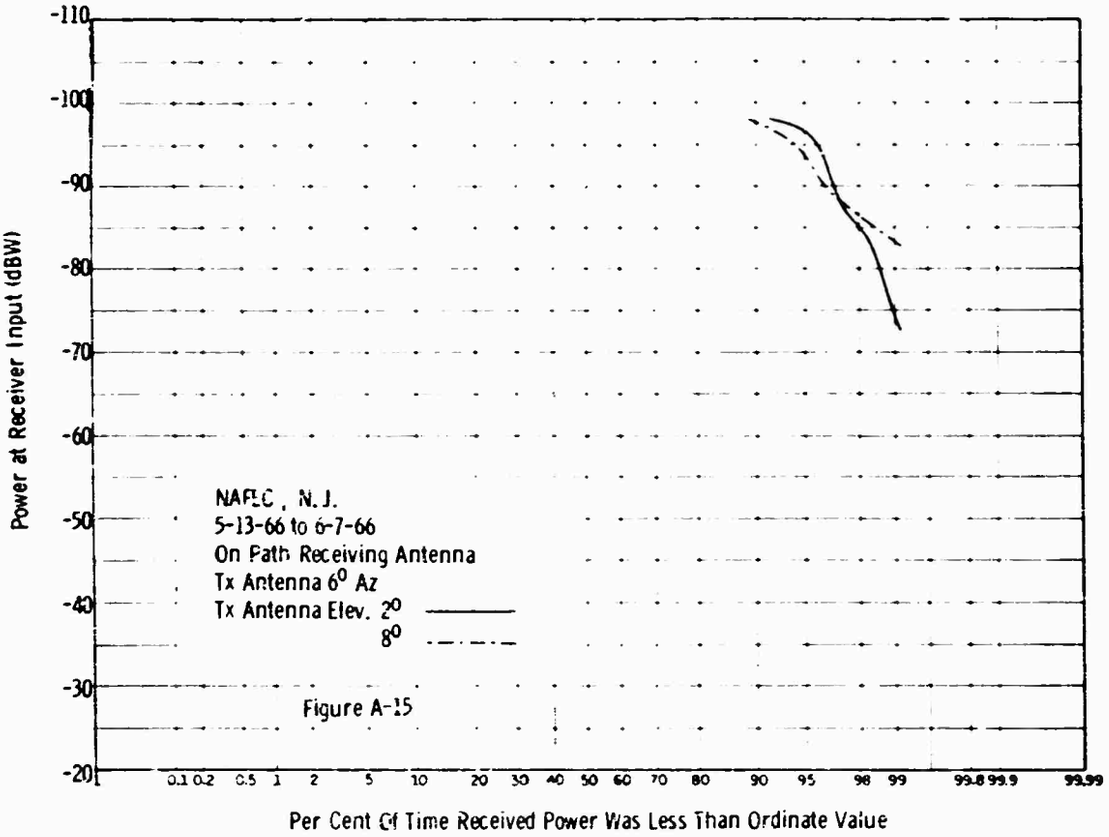



Figure A-15

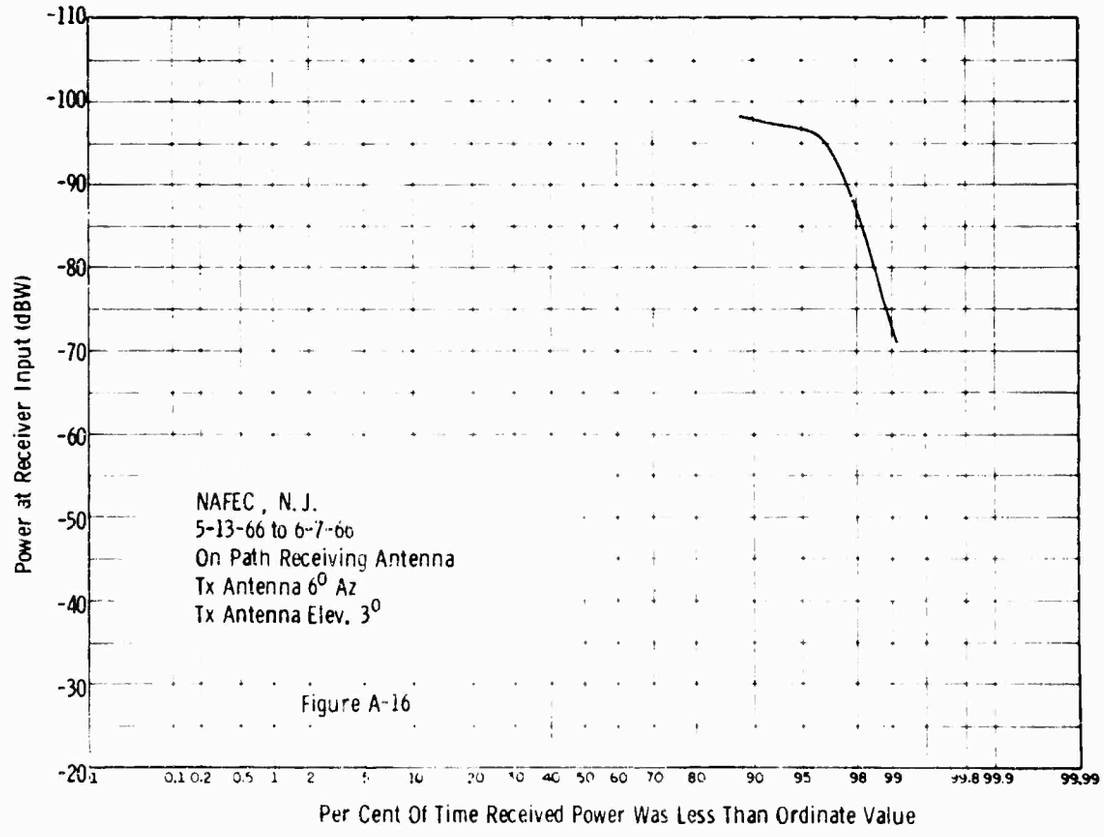



Figure A-16

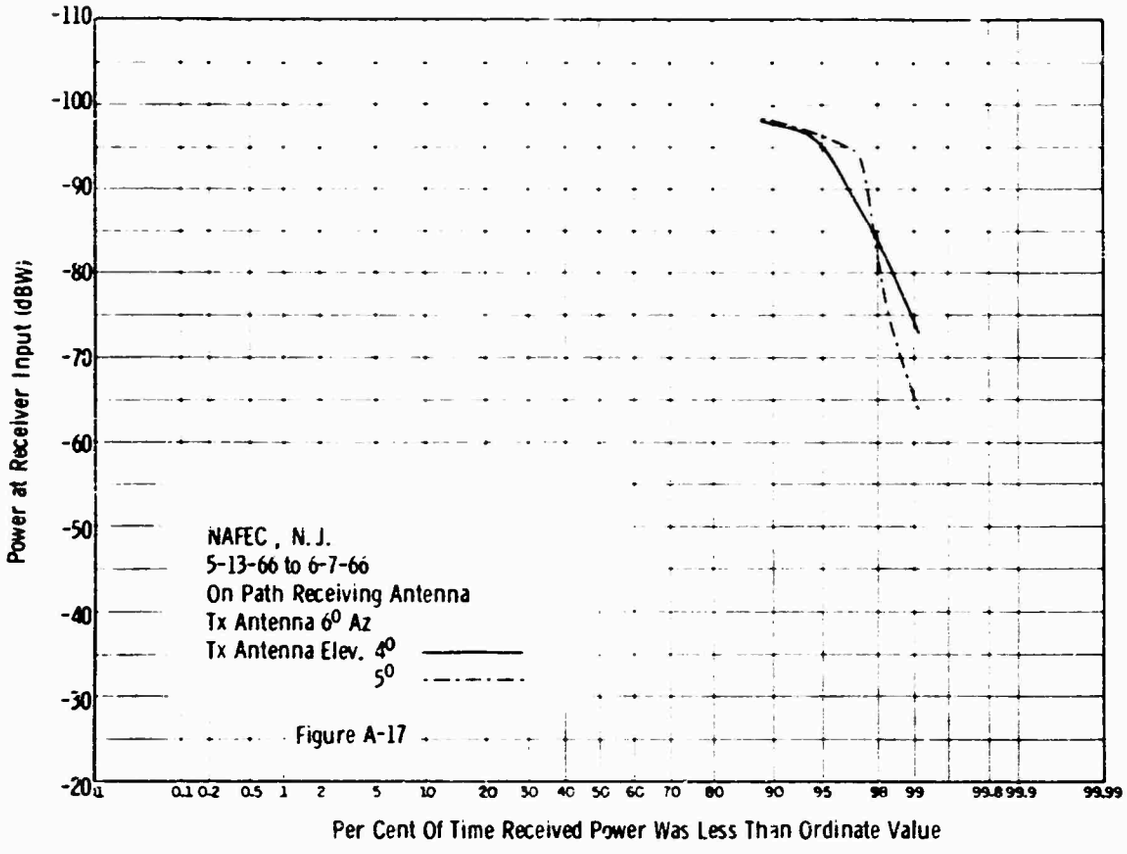



Figure A-17

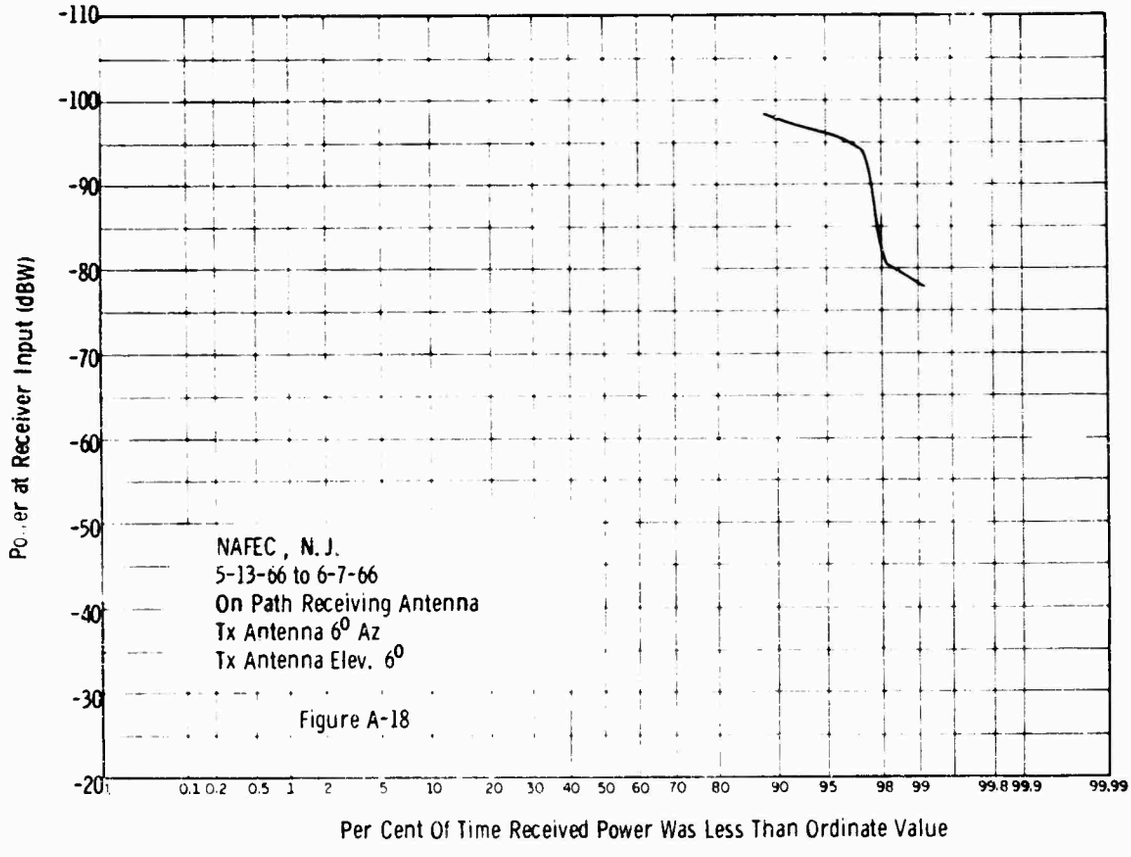



Figure A-18

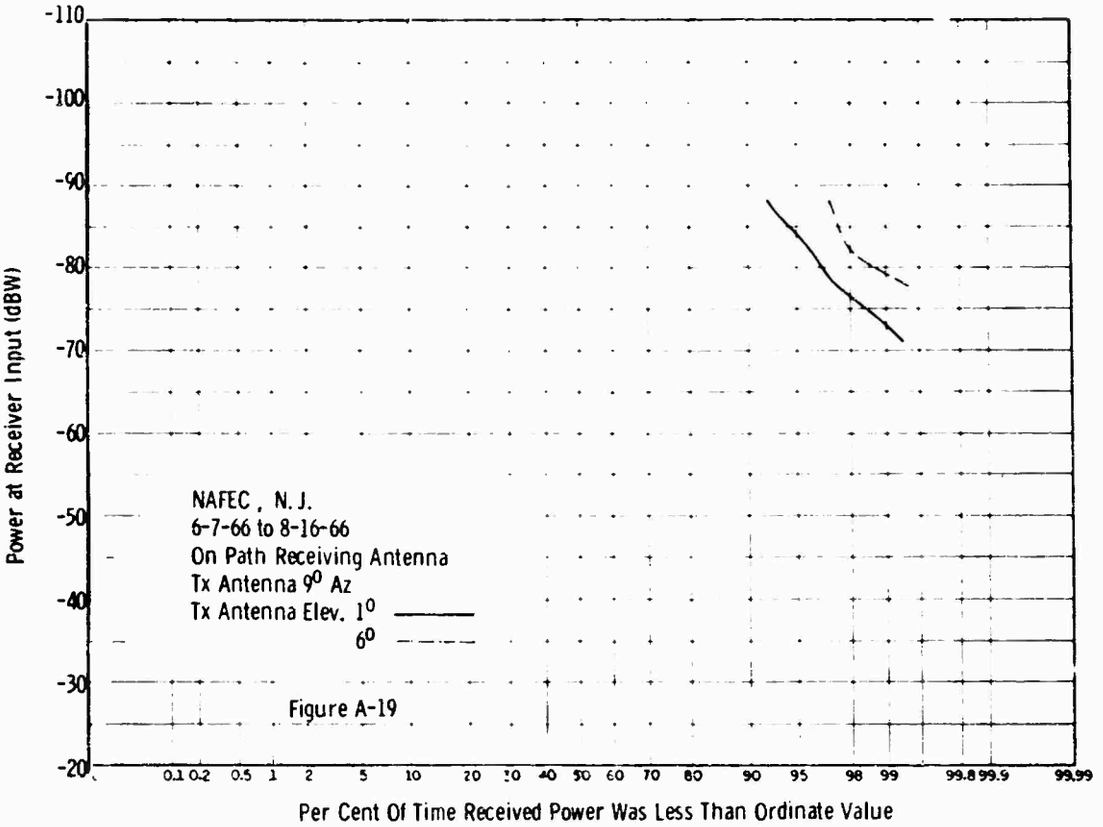



Figure A-19

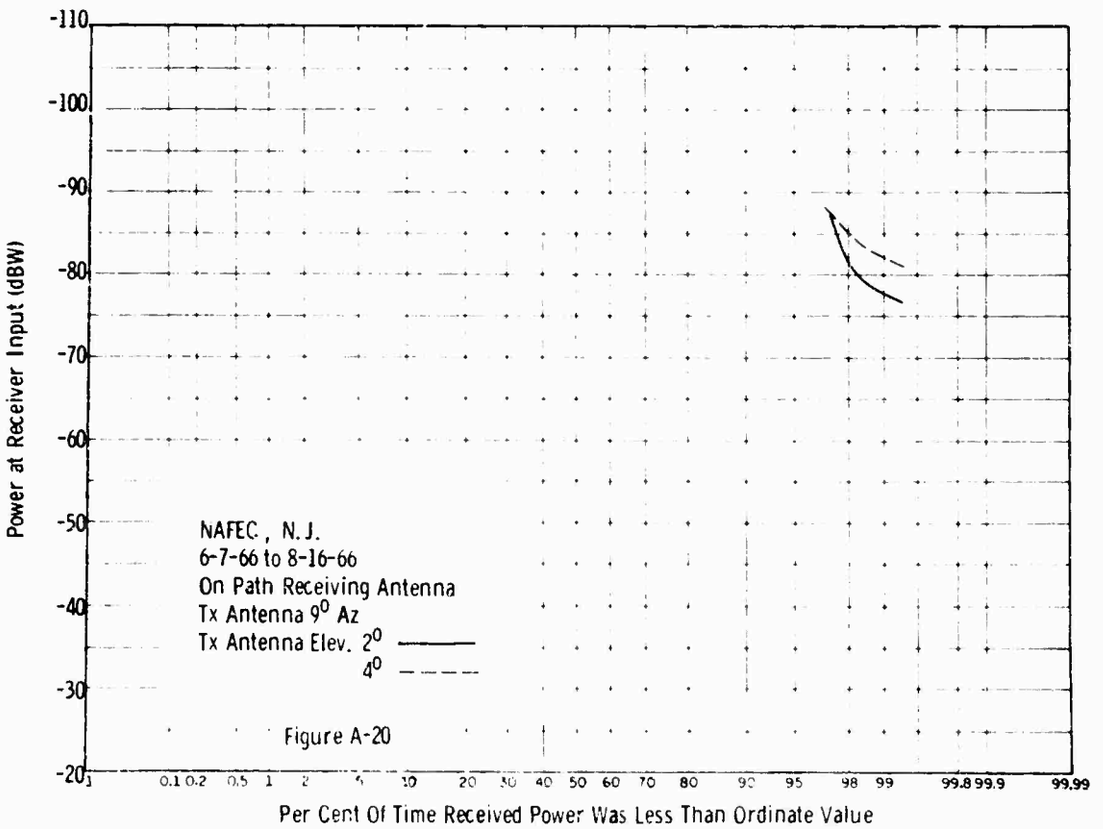
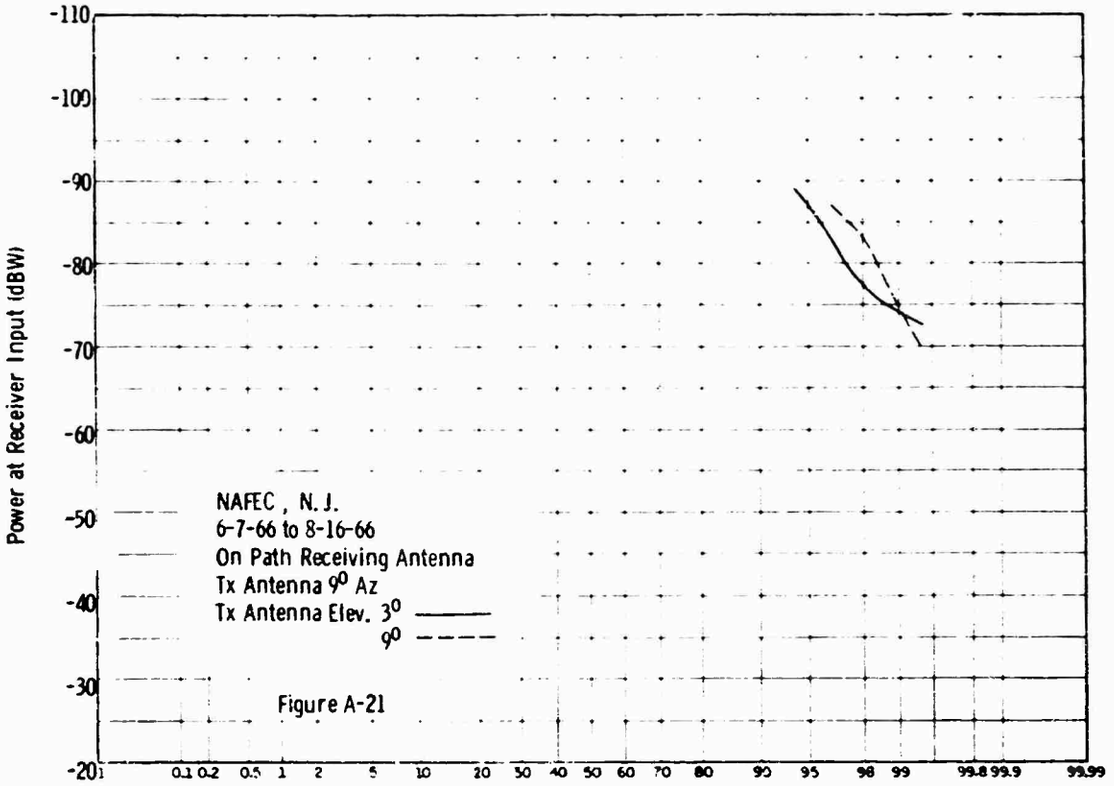
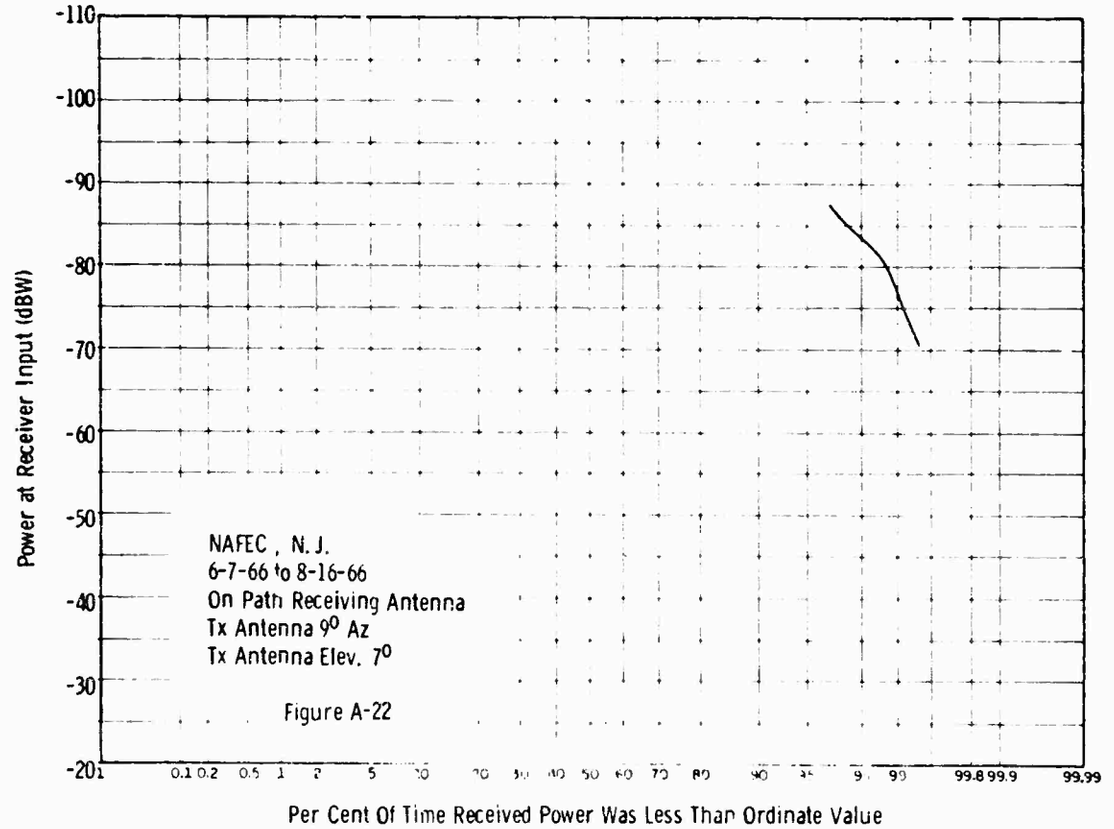



Figure A-20


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC , N. J.
6-7-66 to 8-16-66
On Path Receiving Antenna
Tx Antenna 9° Az
Tx Antenna Elev. 3°
9°
Figure A-21
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC , N. J.
6-7-66 to 8-16-66
On Path Receiving Antenna
Tx Antenna 9° Az
Tx Antenna Elev. 7°
Figure A-22
1 0.1 0.2 0.5 1 2 5 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

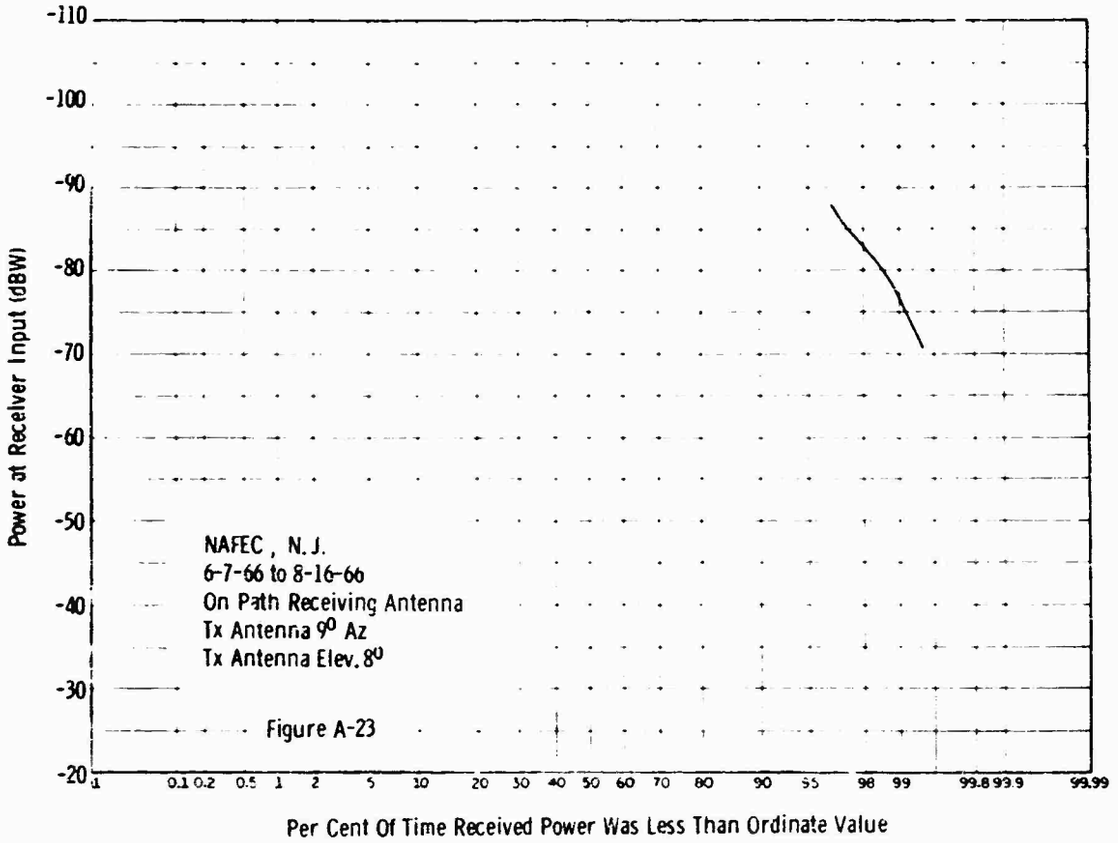



Figure A-23

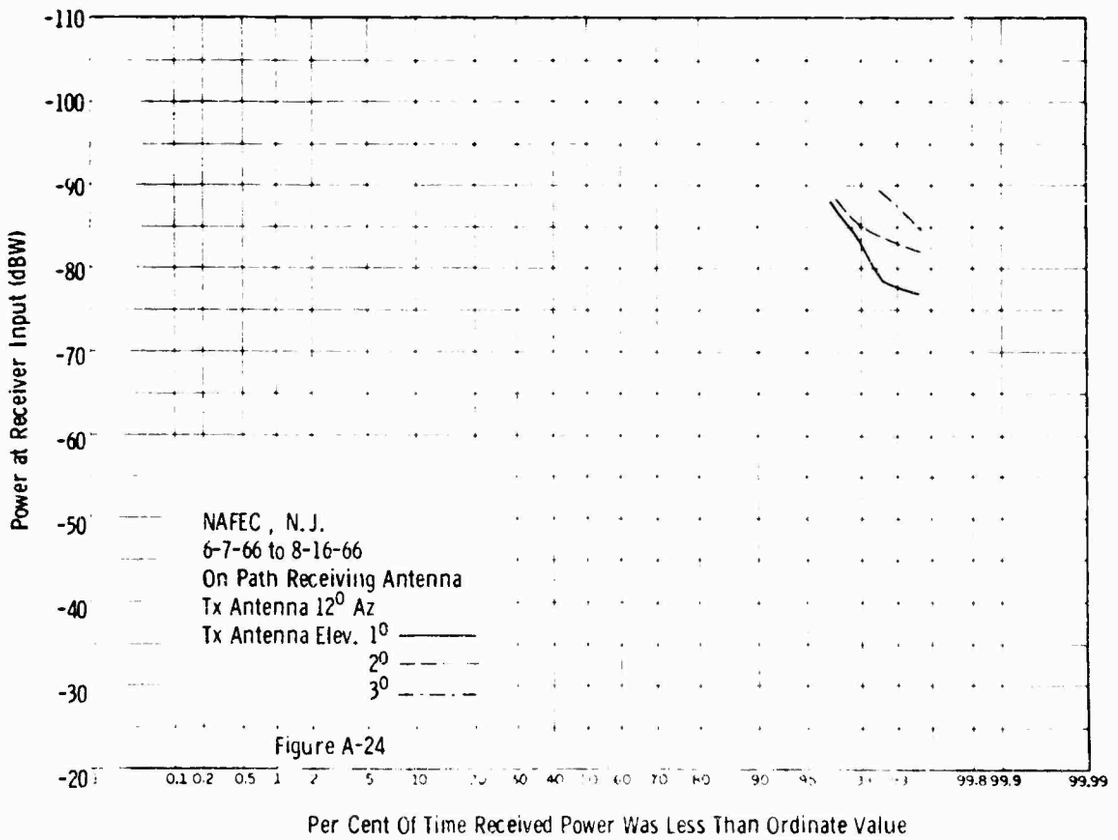



Figure A-24

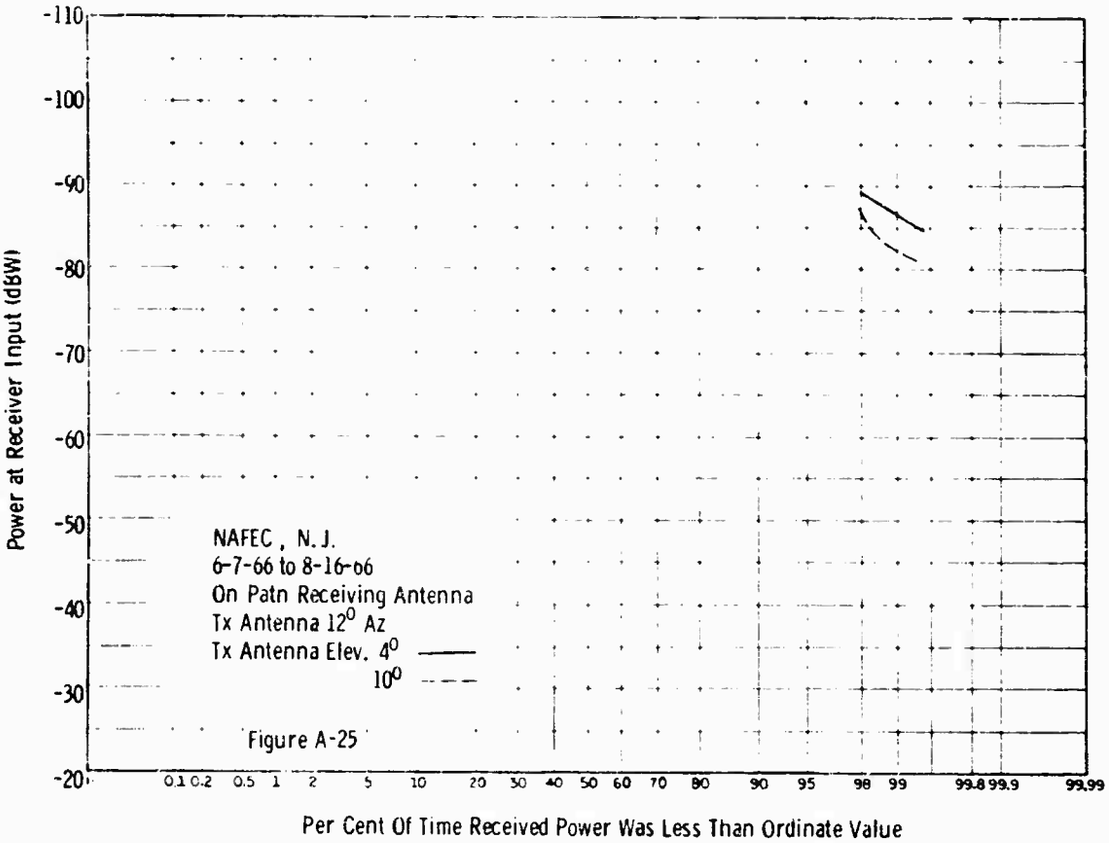



Figure A-25

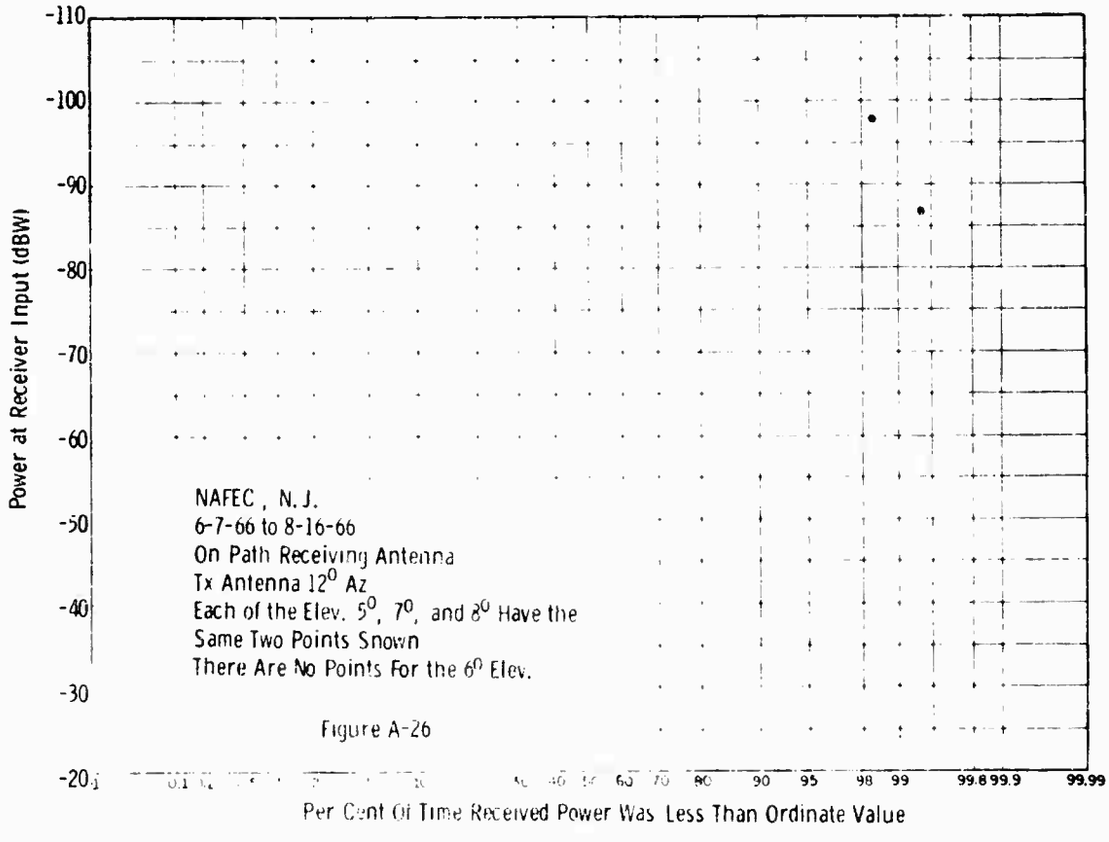



Figure A-26

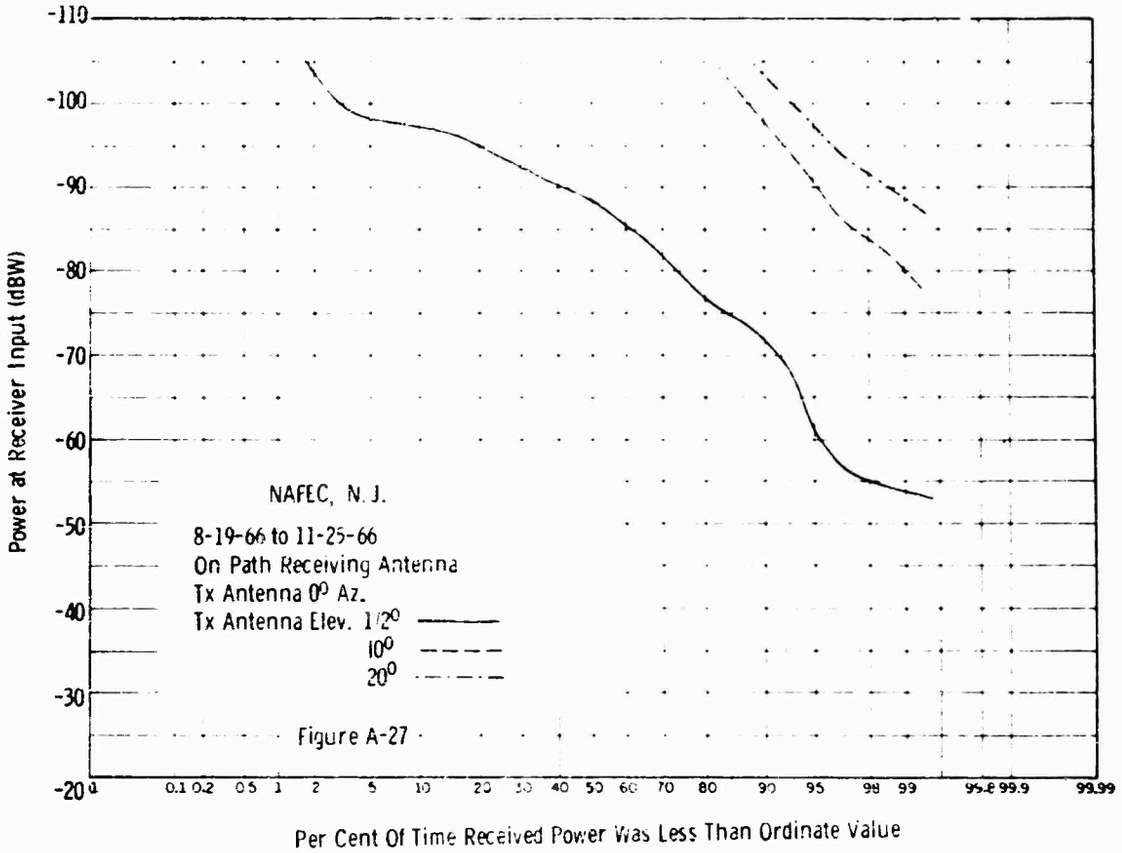



Figure A-27

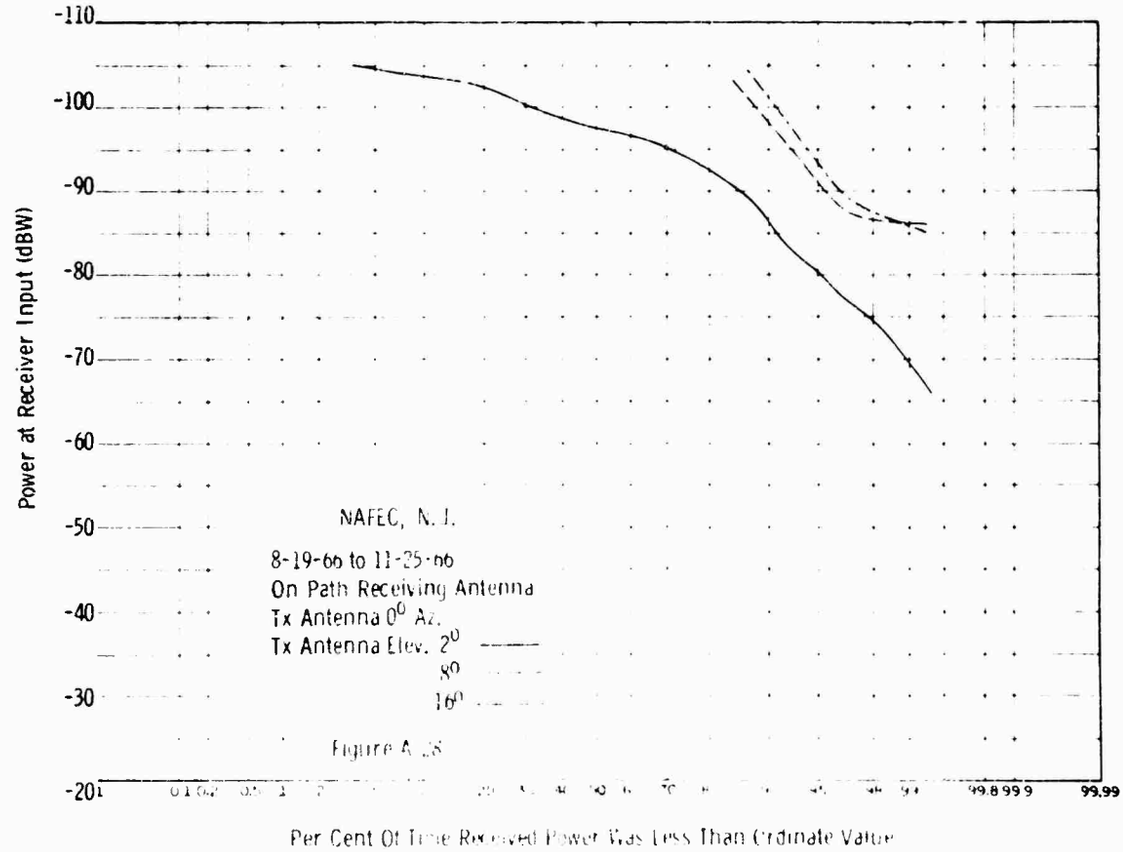
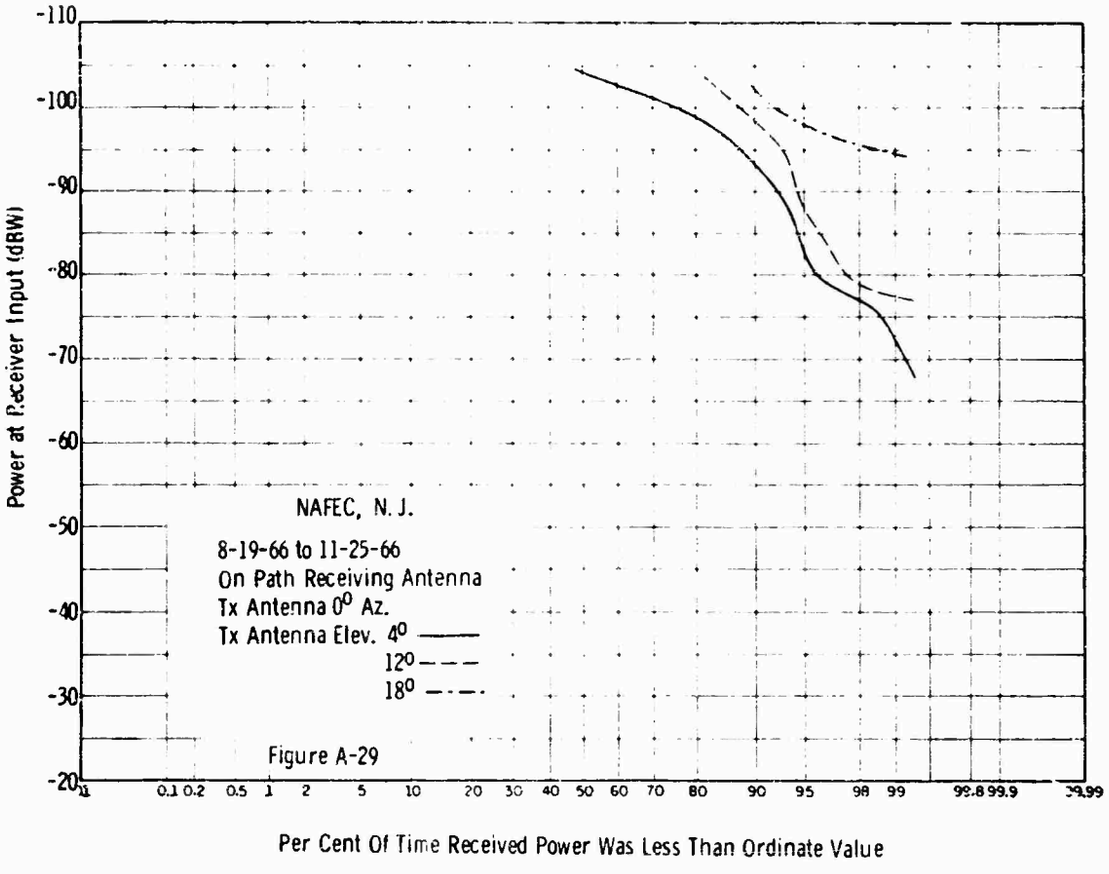
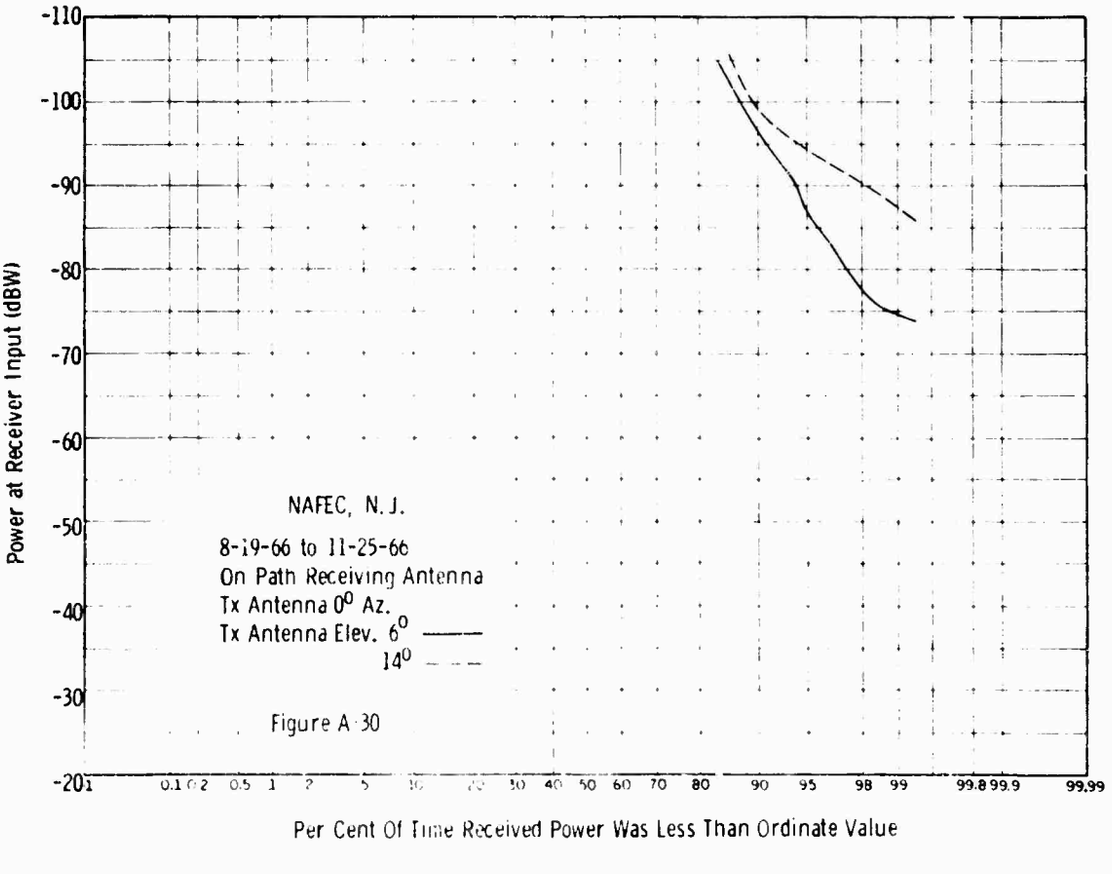



Figure A-28


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N. J.
8-19-66 to 11-25-66
On Path Receiving Antenna
Tx Antenna 0° Az.
Tx Antenna Elev. 4° ——
12° – – –
18° —·—·
Figure A-29
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N. J.
8-19-66 to 11-25-66
On Path Receiving Antenna
Tx Antenna 0° Az.
Tx Antenna Elev. 6° ——
14° – – –
Figure A-30
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

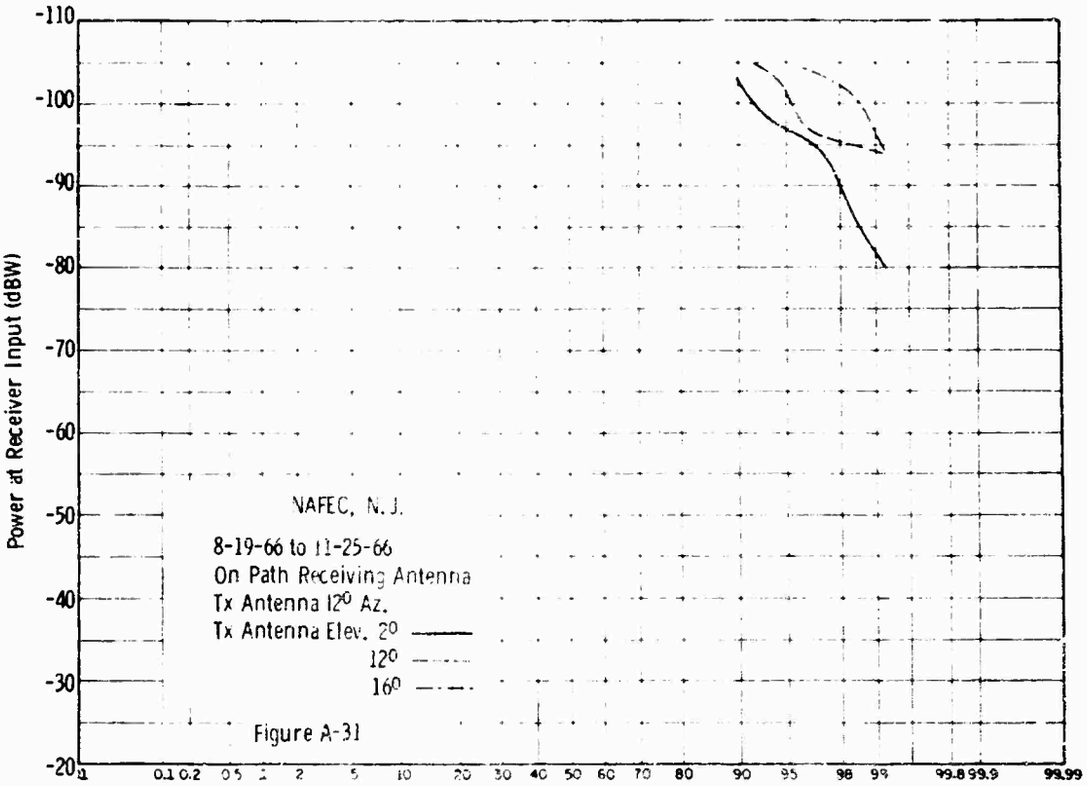



Figure A-31

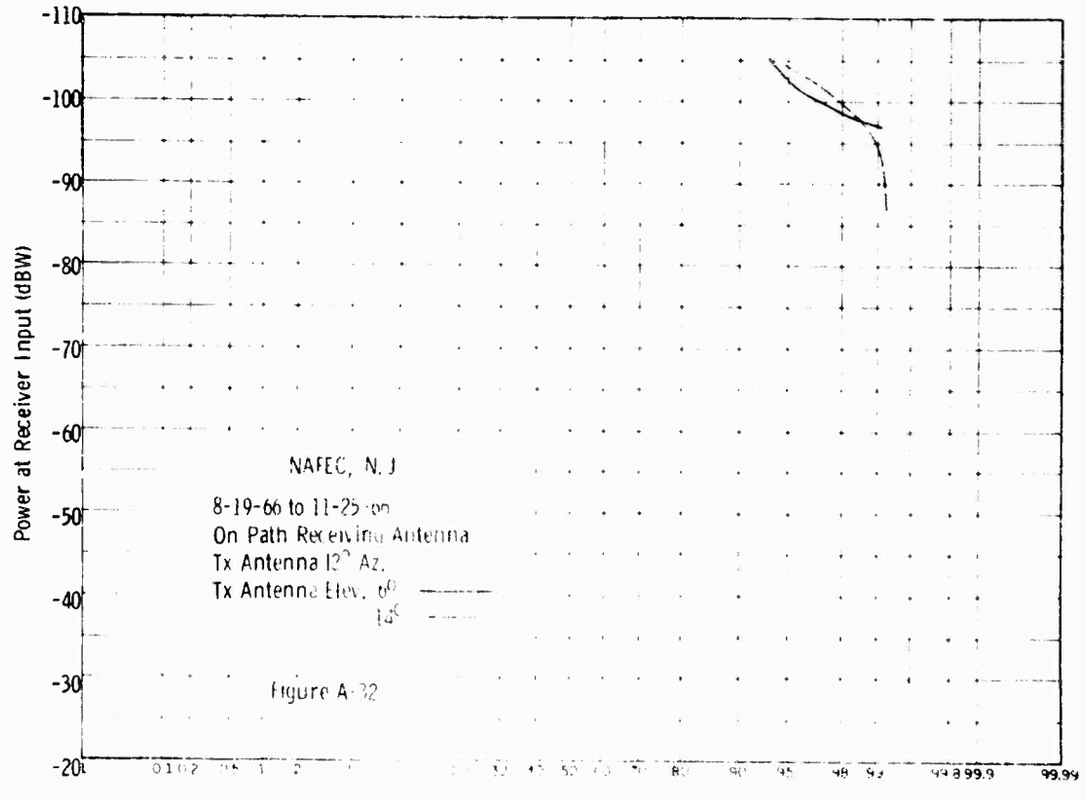



Figure A-32

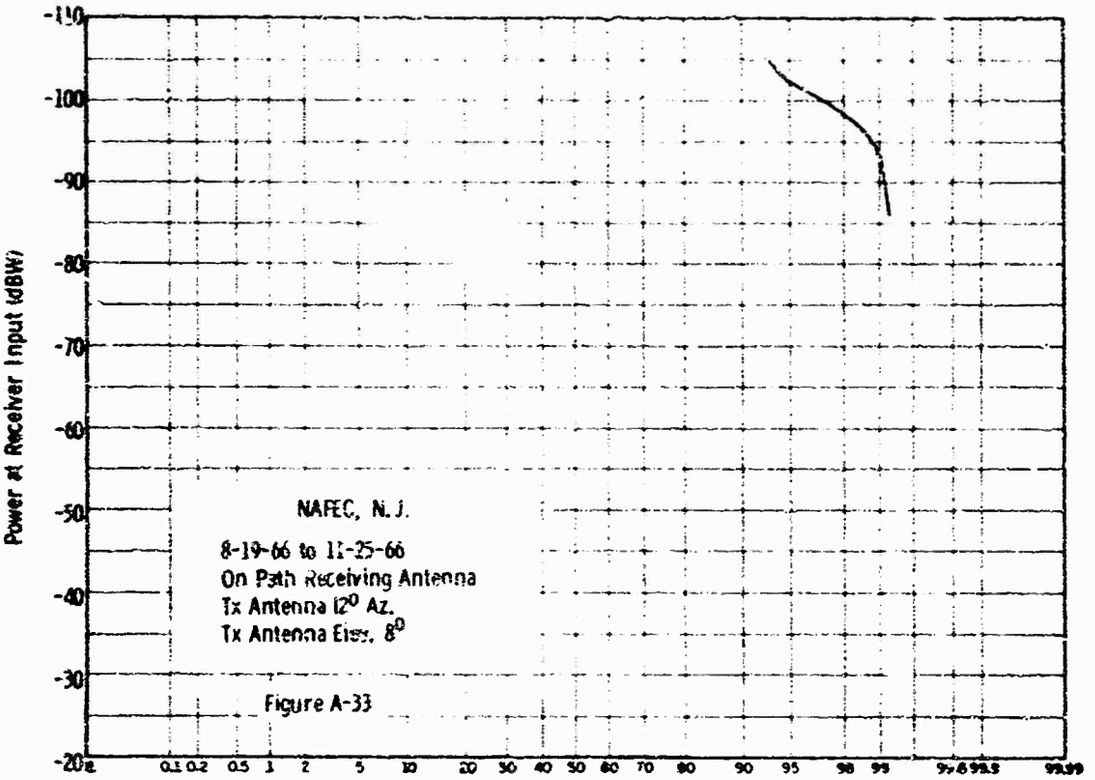



Figure A-33

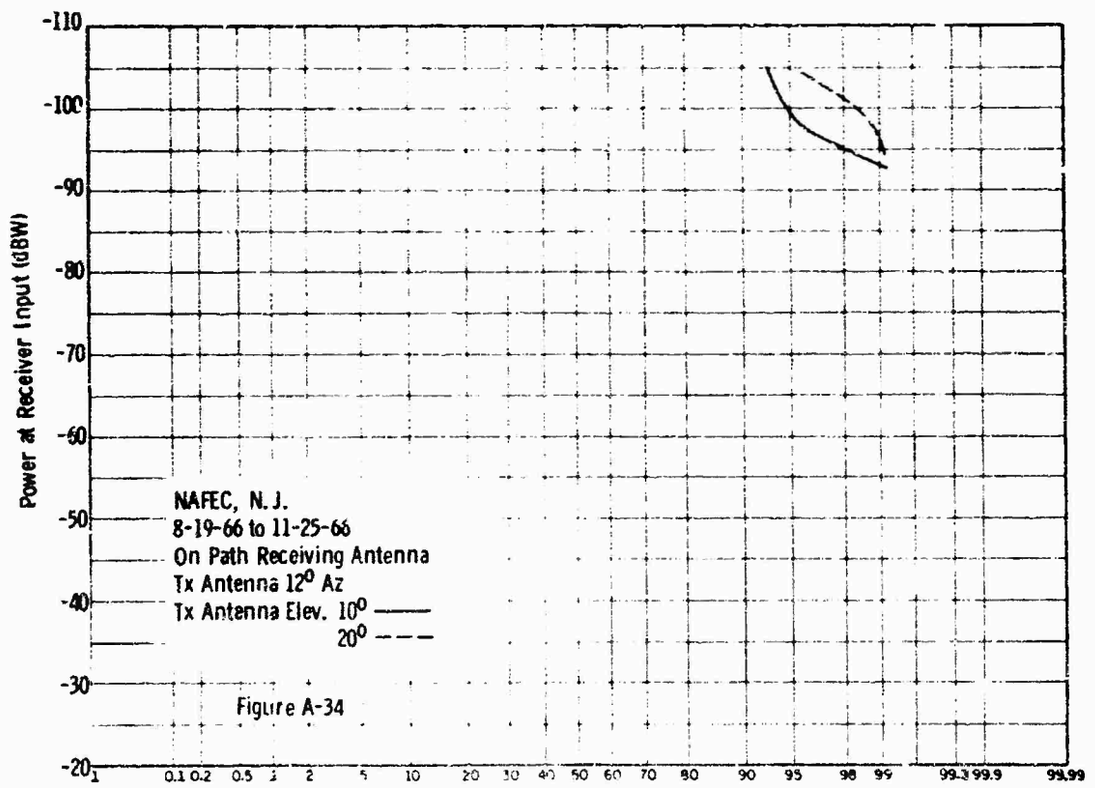



Figure A-34

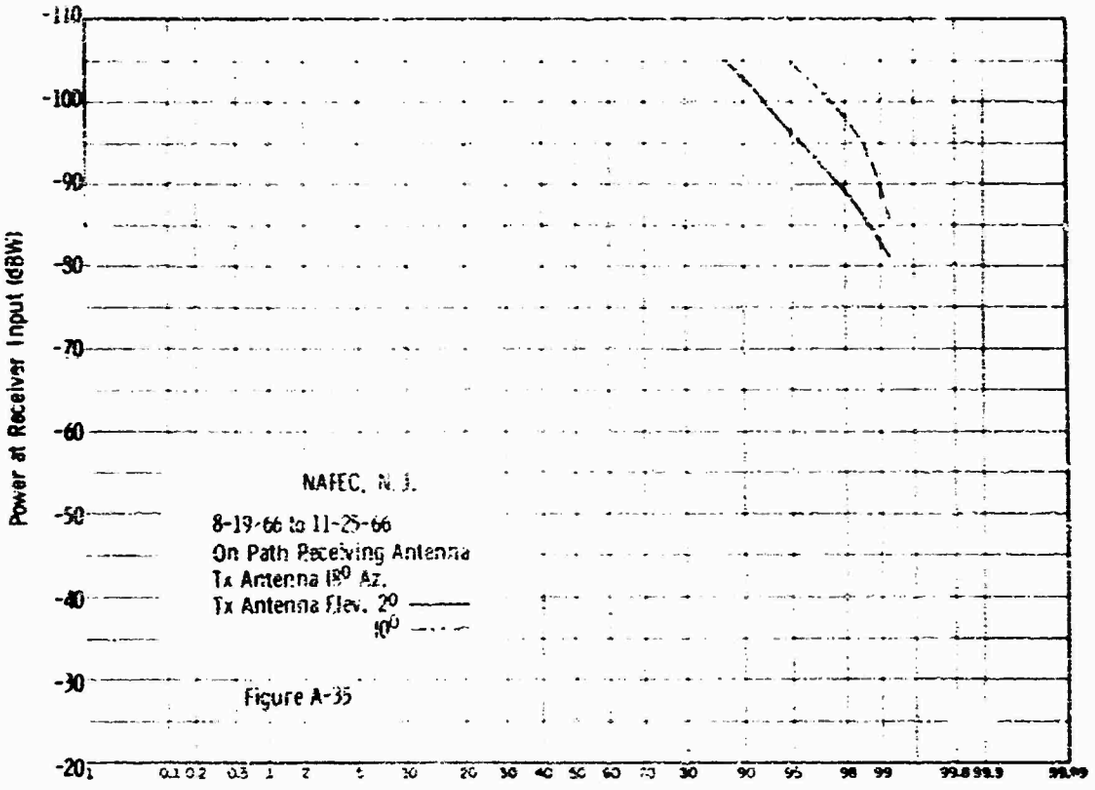



Figure A-35

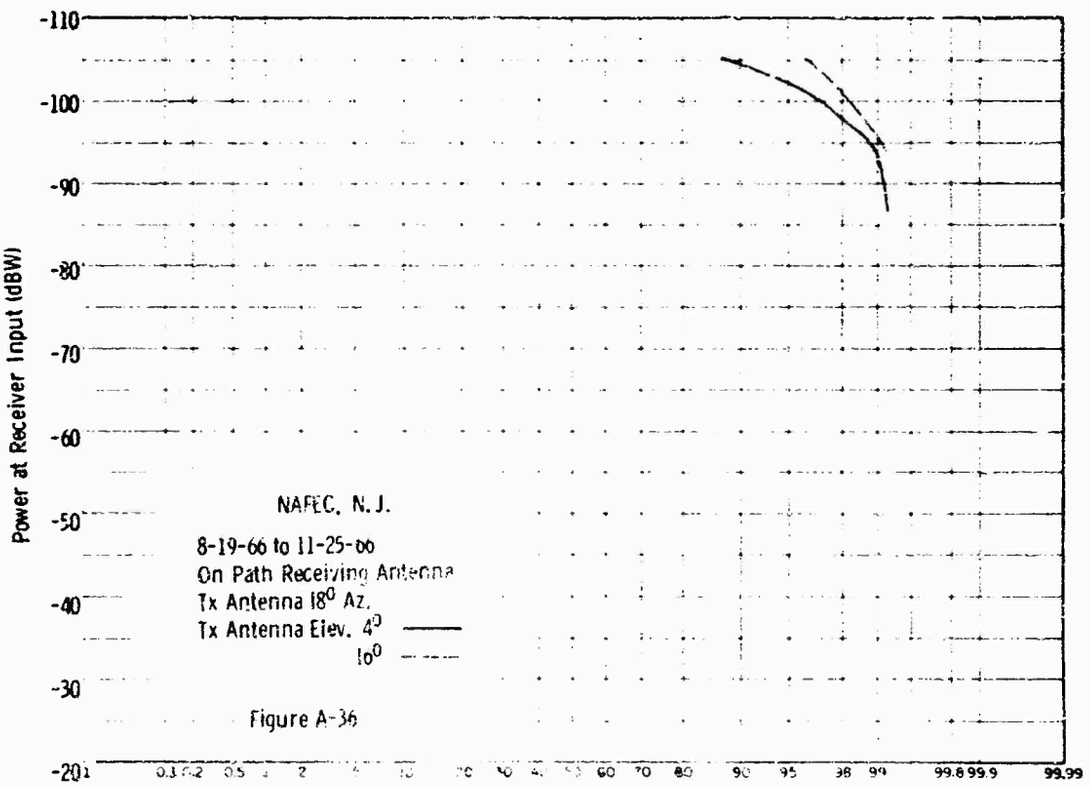
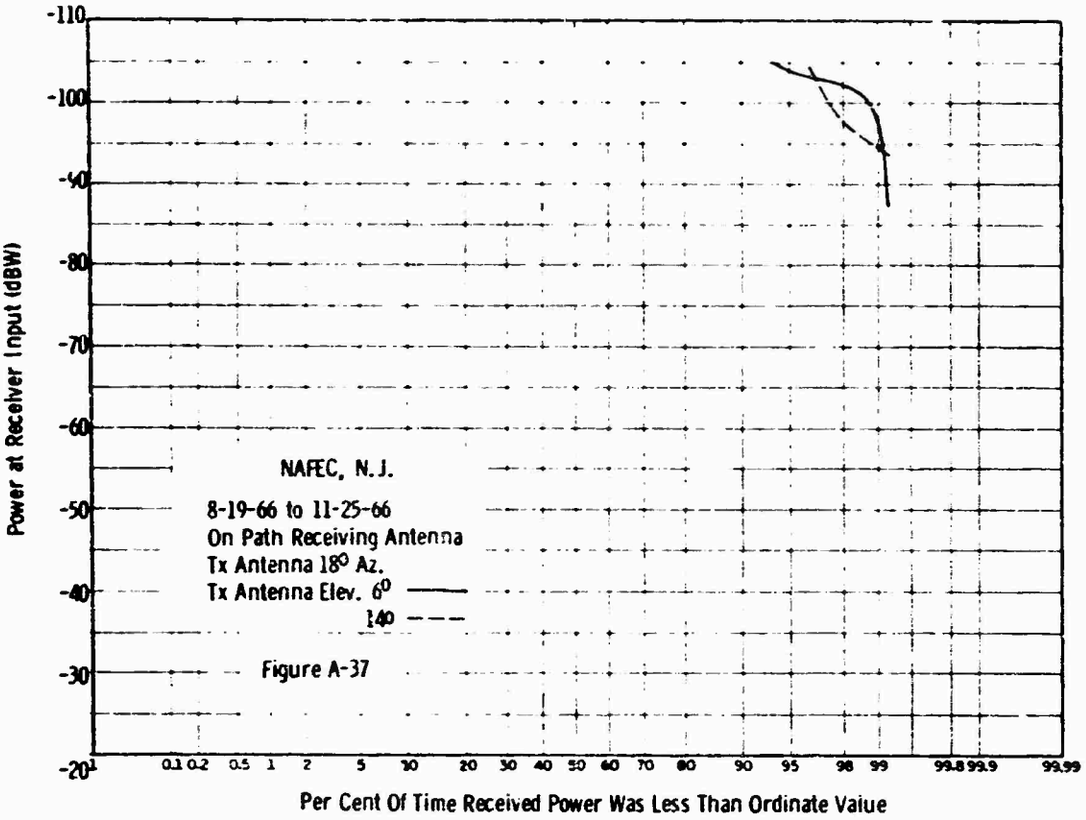
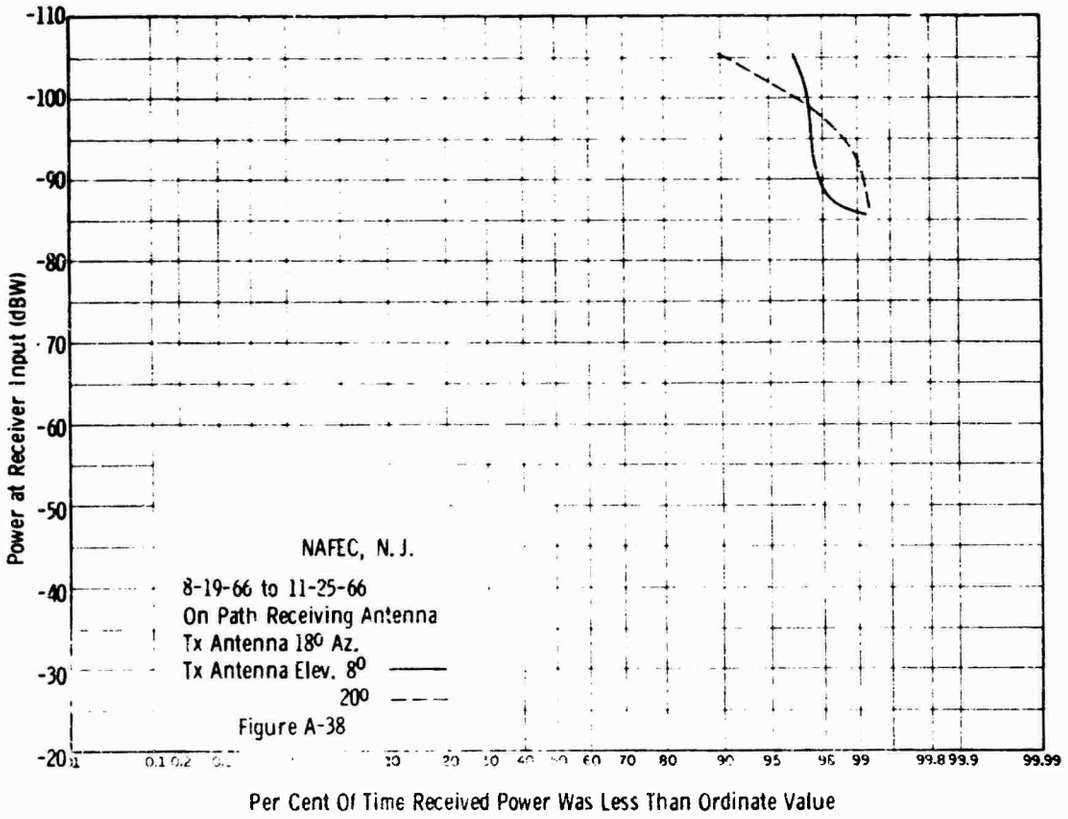



Figure A-36


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
8-19-66 to 11-25-66
On Path Receiving Antenna
Tx Antenna 18° Az.
Tx Antenna Elev. 6°
14°
Figure A-37
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
8-19-66 to 11-25-66
On Path Receiving Antenna
Tx Antenna 18° Az.
Tx Antenna Elev. 8°
20°
Figure A-38
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

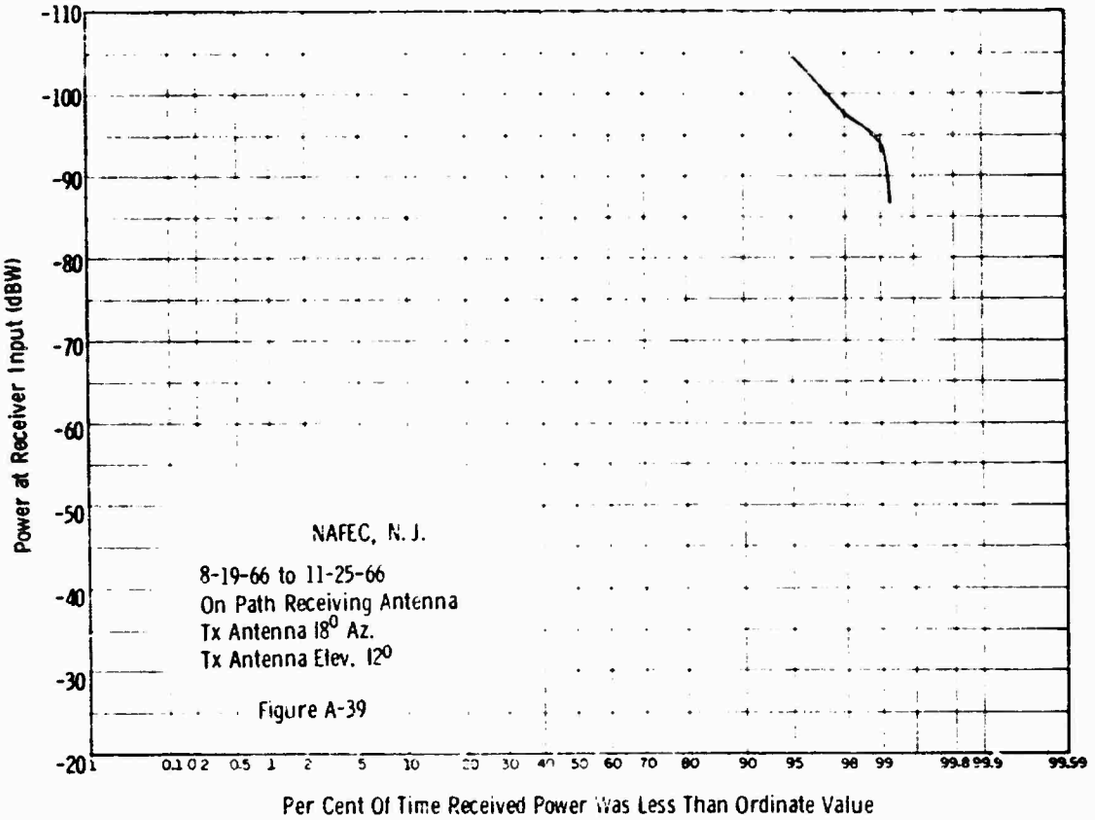



Figure A-39

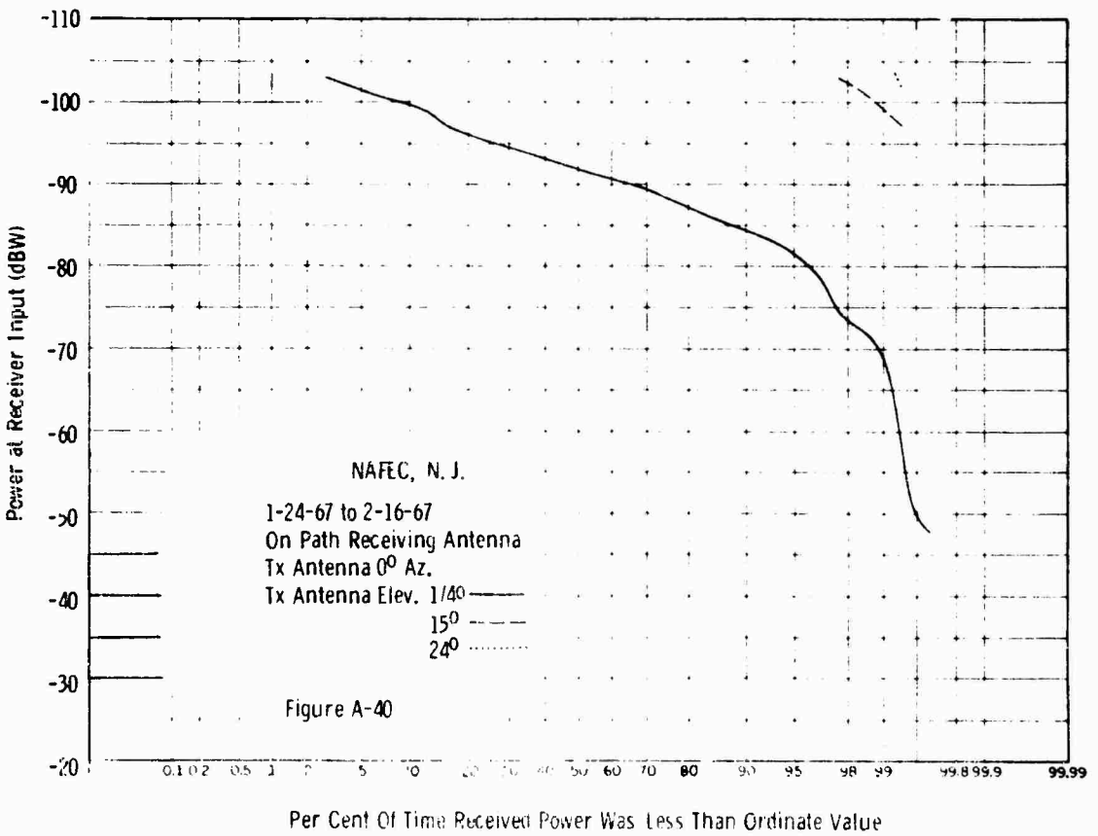
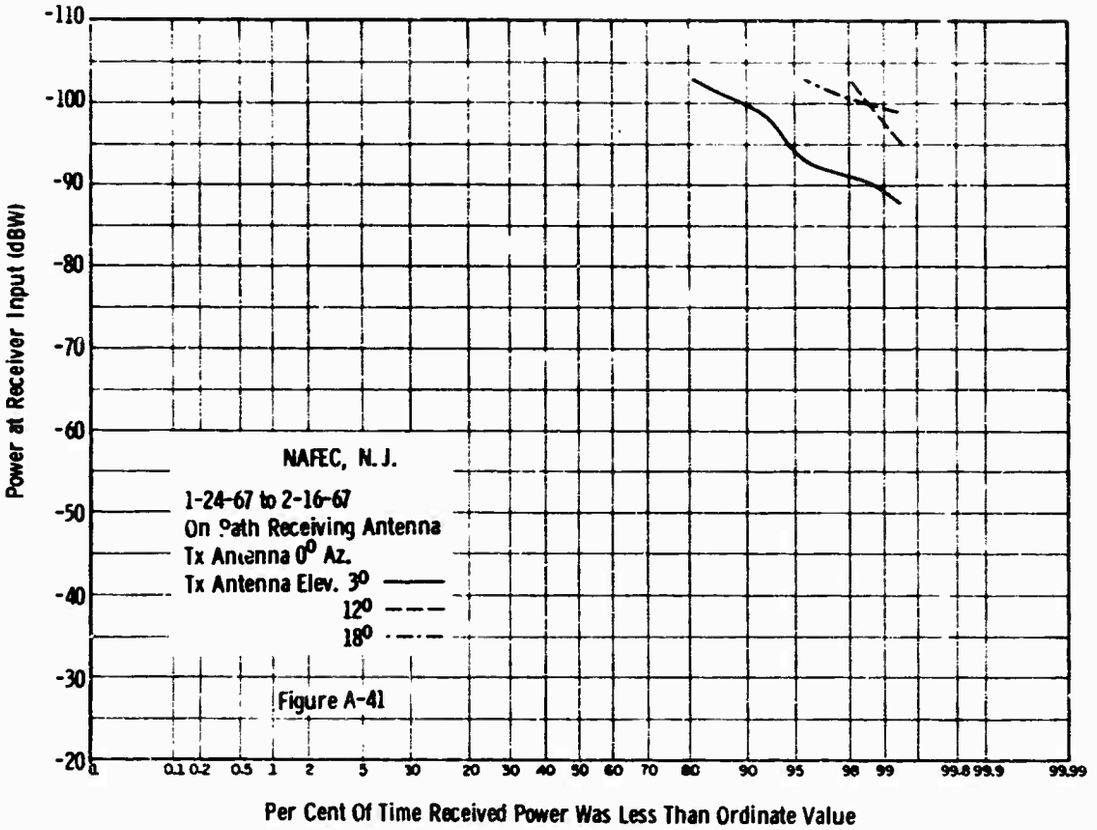
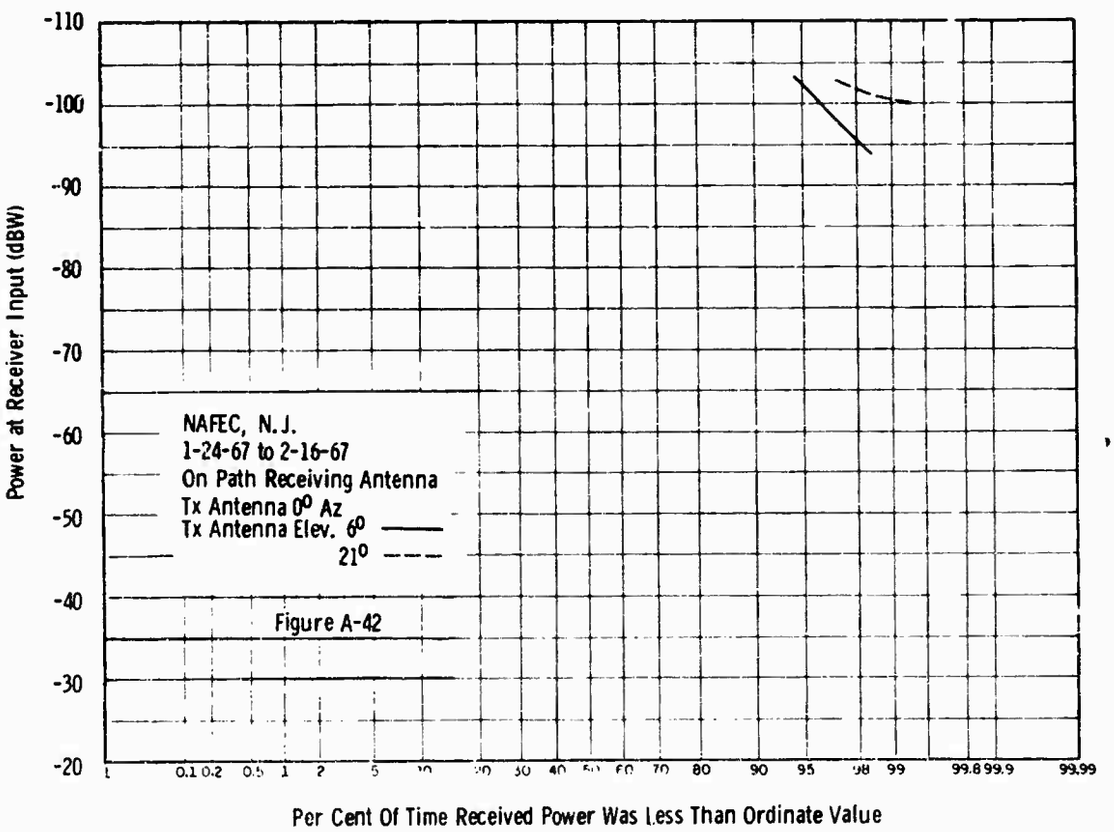



Figure A-40


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
On Path Receiving Antenna
Tx Antenna 0° Az.
Tx Antenna Elev. 3°
12°
18°
Figure A-41
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
On Path Receiving Antenna
Tx Antenna 0° Az
Tx Antenna Elev. 6°
21°
Figure A-42
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

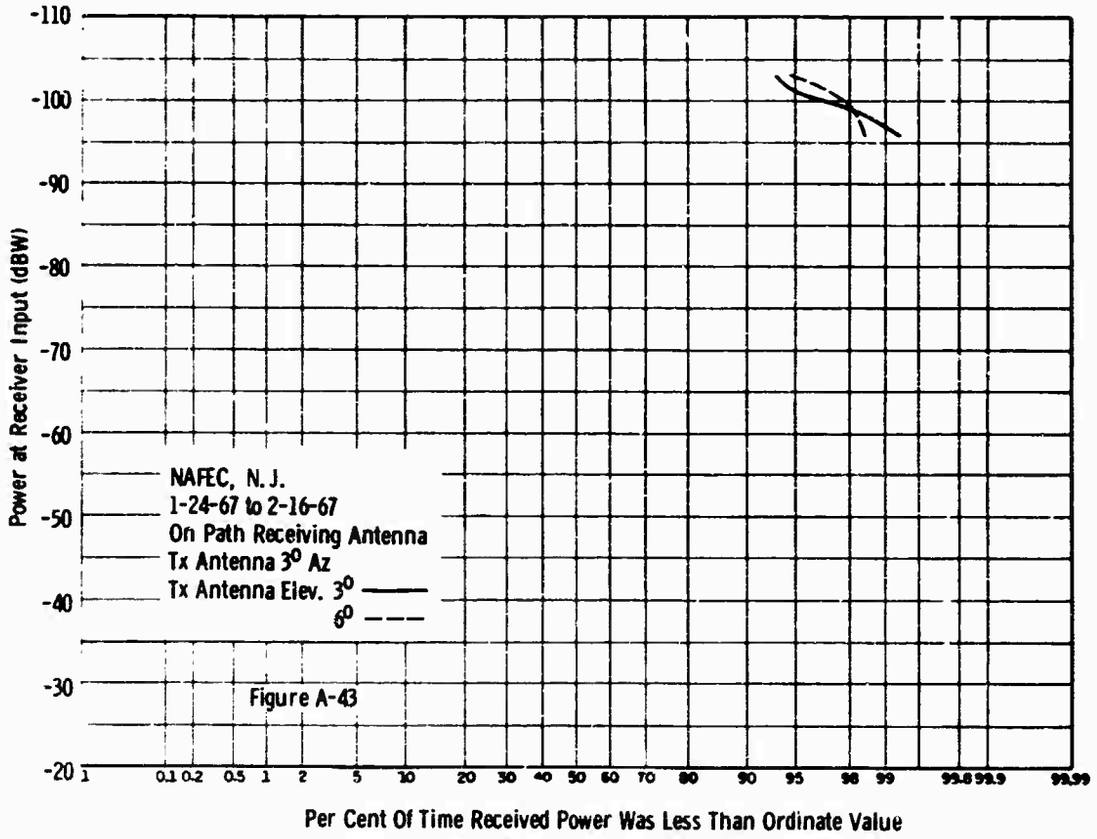



Figure A-43

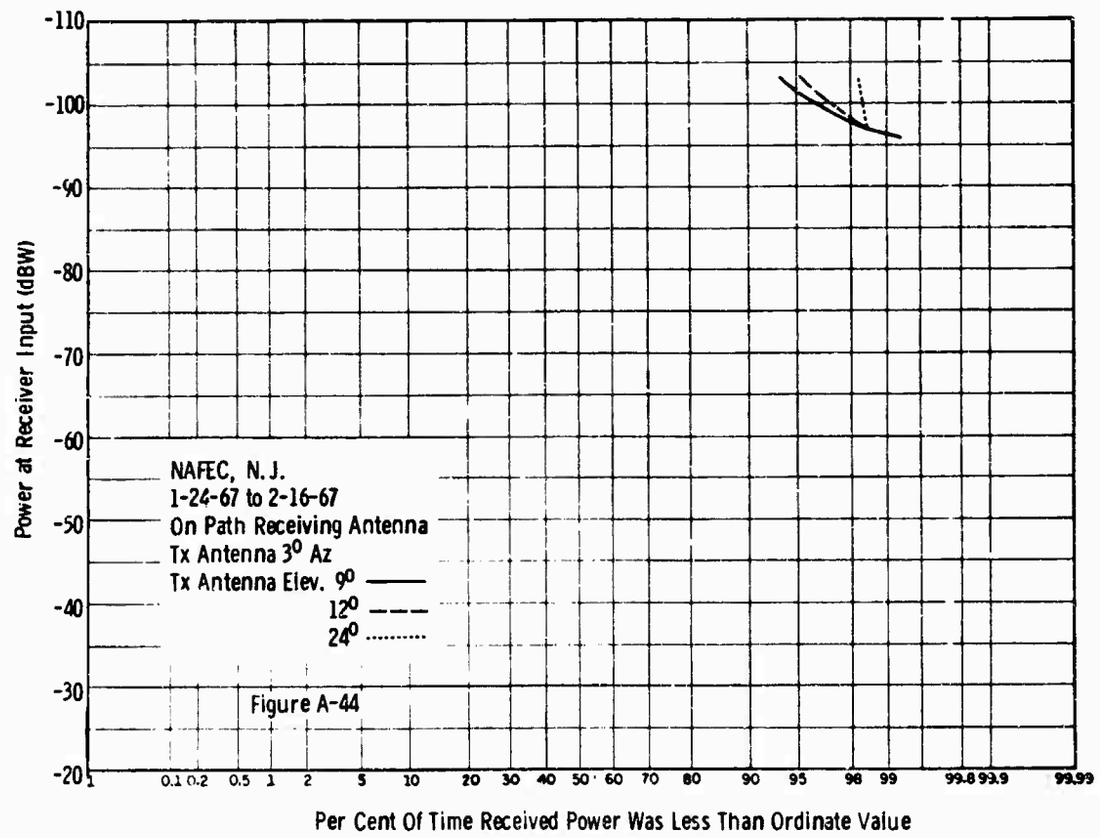
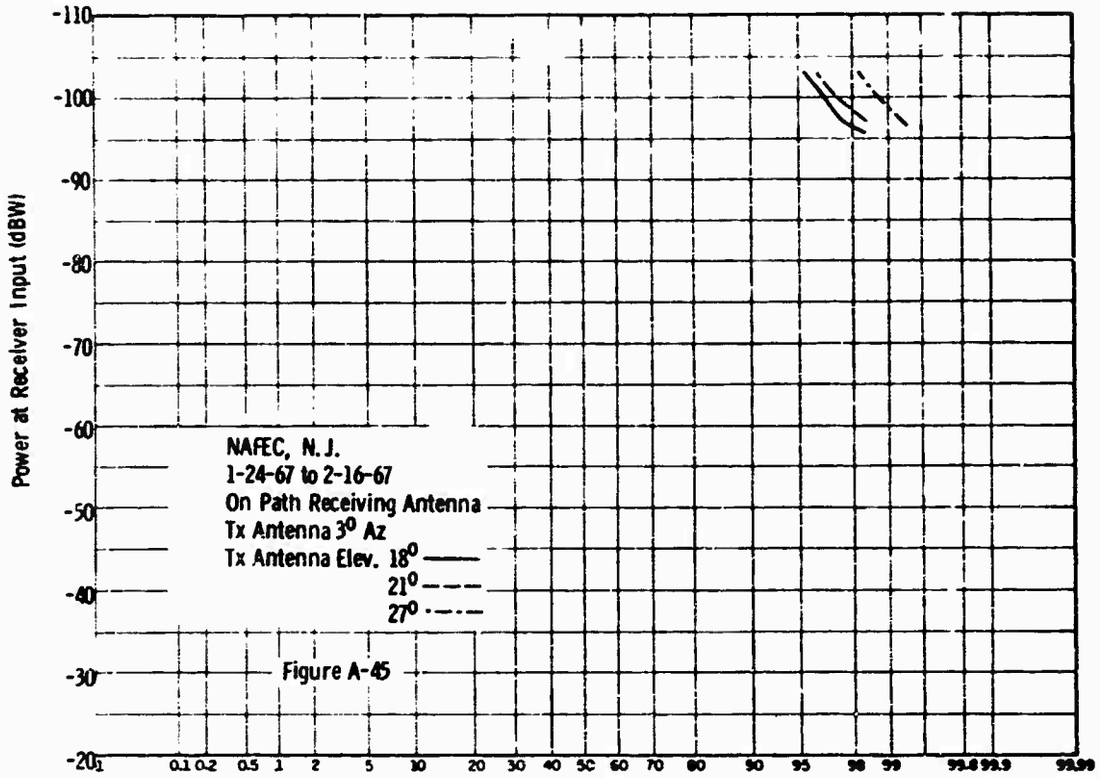
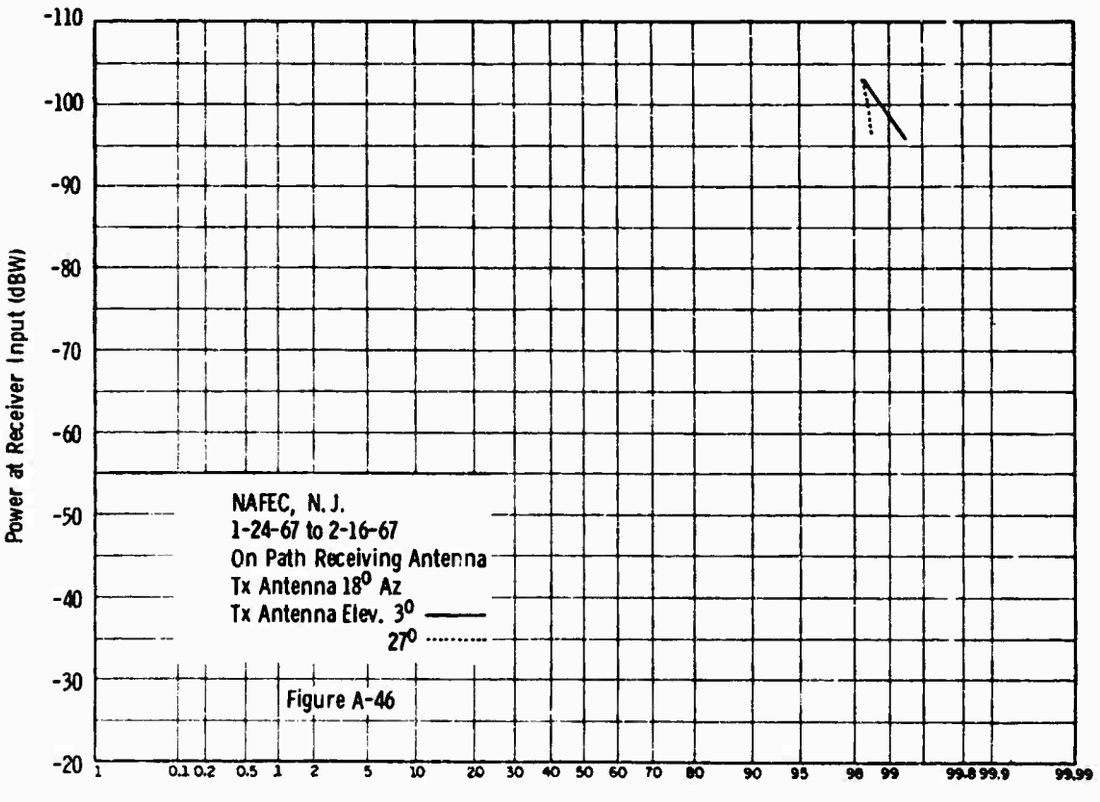



Figure A-44


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
On Path Receiving Antenna
Tx Antenna 3° Az
Tx Antenna Elev. 18° ——
21° – – –
27° ·–·–
Figure A-45
1
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
On Path Receiving Antenna
Tx Antenna 18° Az
Tx Antenna Elev. 3° ——
27° .....
Figure A-46
1
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

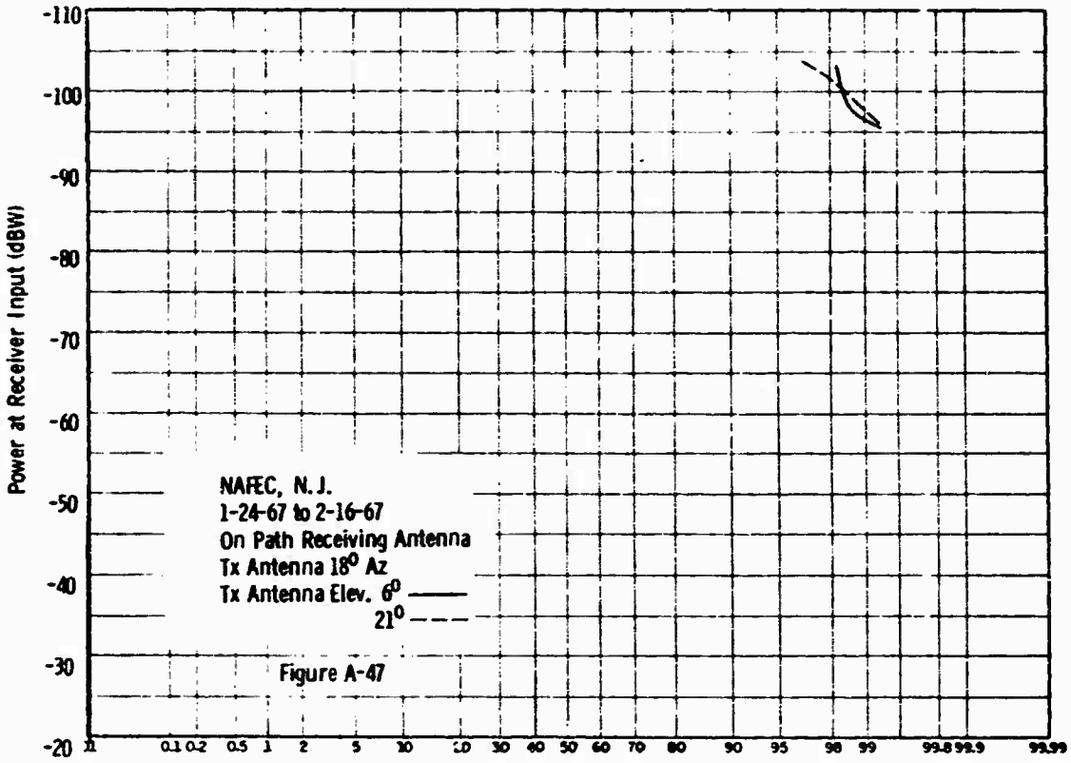



Figure A-47

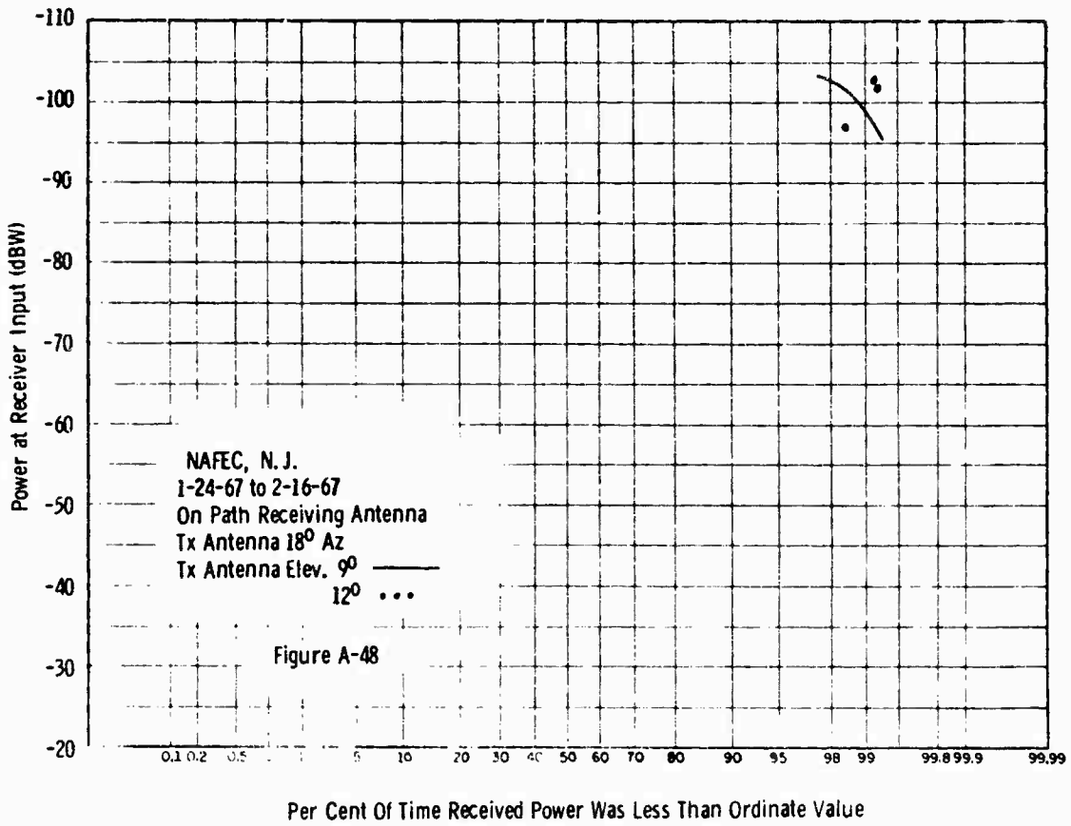
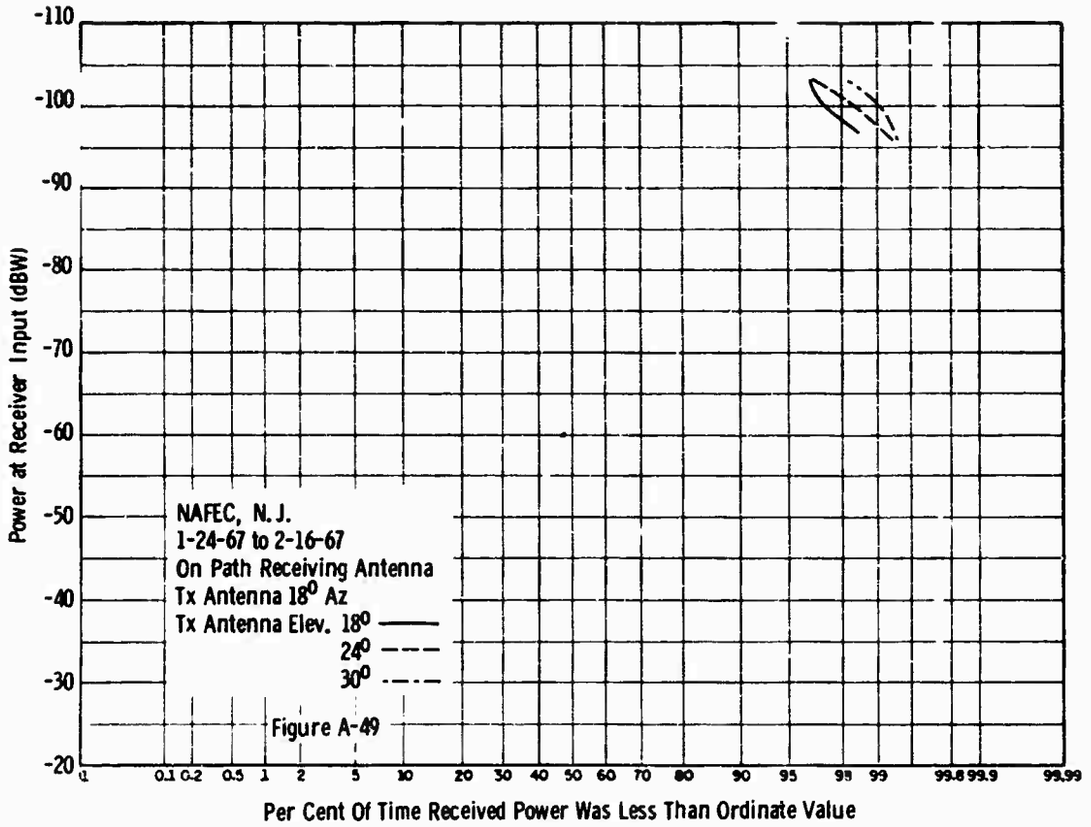



Figure A-48


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
On Path Receiving Antenna
Tx Antenna 18° Az
Tx Antenna Elev. 18°
24°
30°
Figure A-49
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

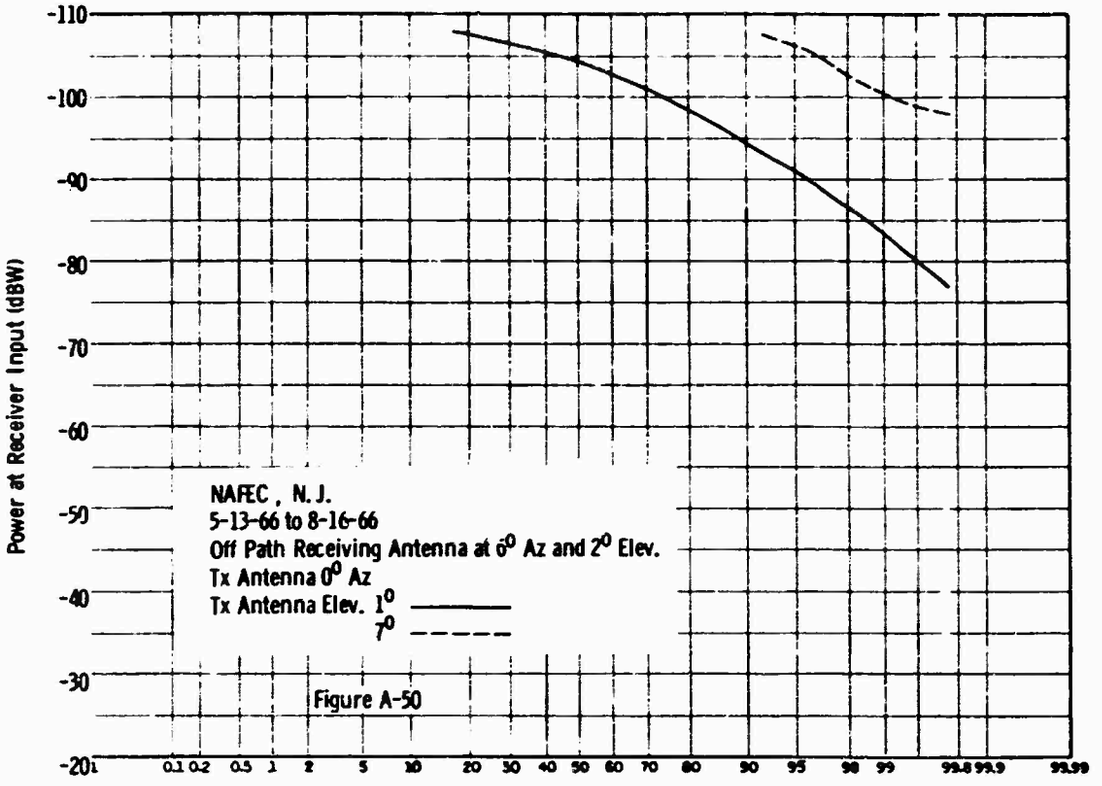



Figure A-50

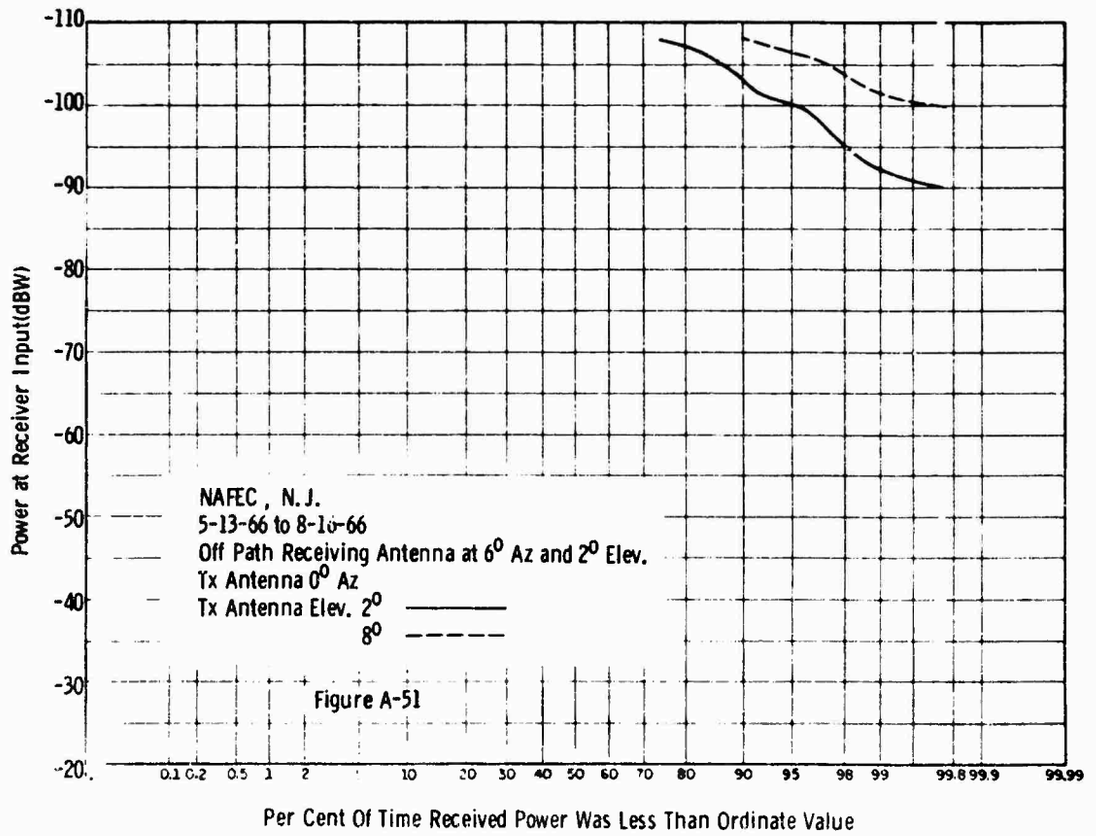
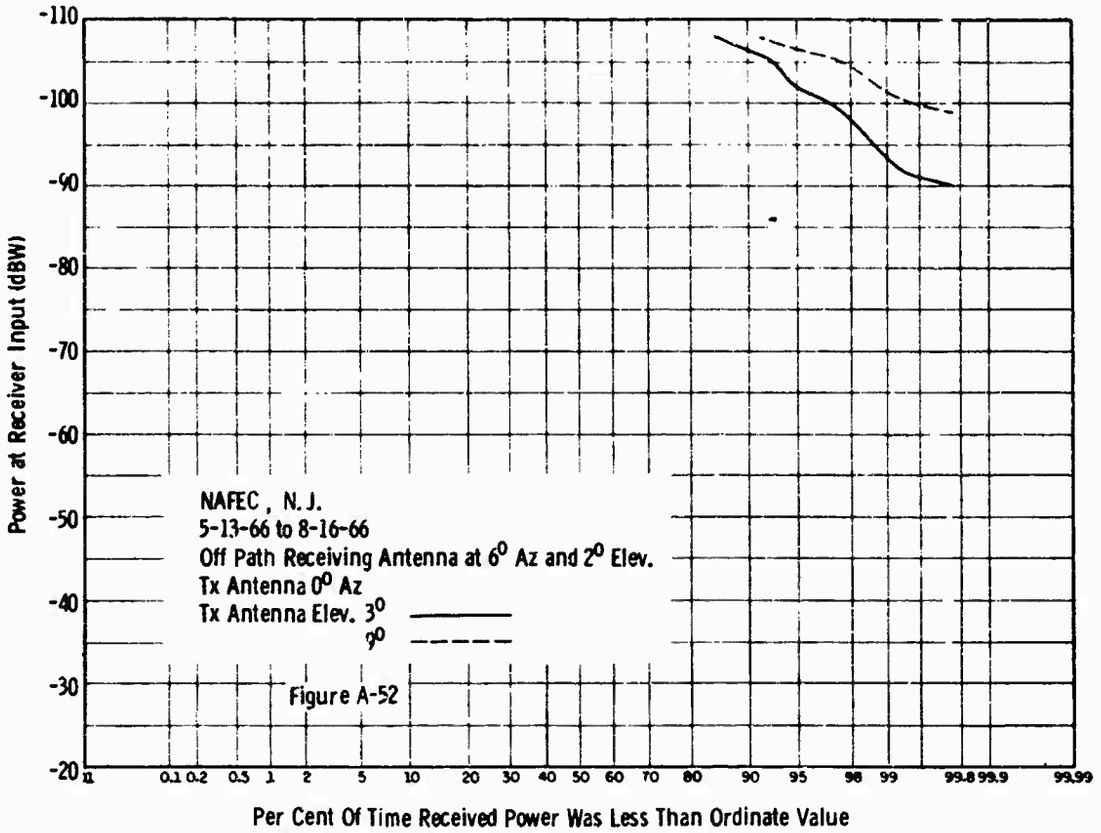
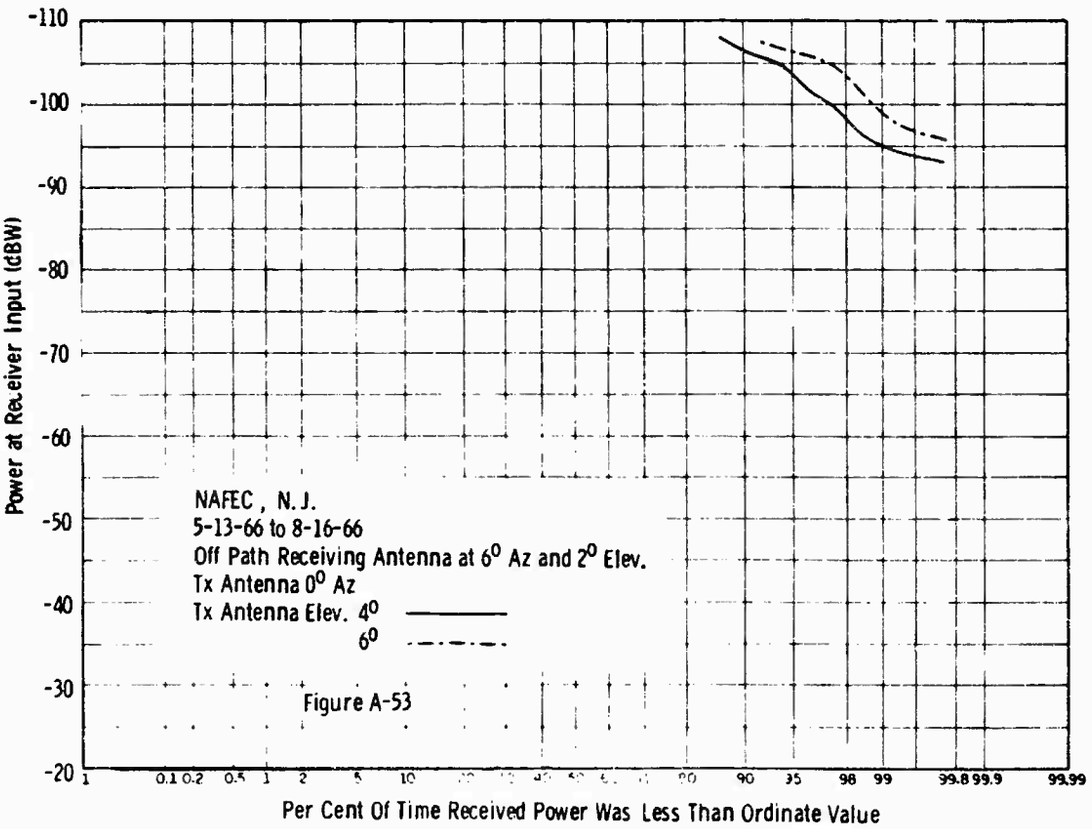



Figure A-51


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC , N. J.
5-13-66 to 8-16-66
Off Path Receiving Antenna at 6° Az and 2° Elev.
Tx Antenna 0° Az
Tx Antenna Elev. 3°
9°
Figure A-52
1
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC , N. J.
5-13-66 to 8-16-66
Off Path Receiving Antenna at 6° Az and 2° Elev.
Tx Antenna 0° Az
Tx Antenna Elev. 4°
6°
Figure A-53
1
0.1 0.2 0.5 1 2 5 10 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

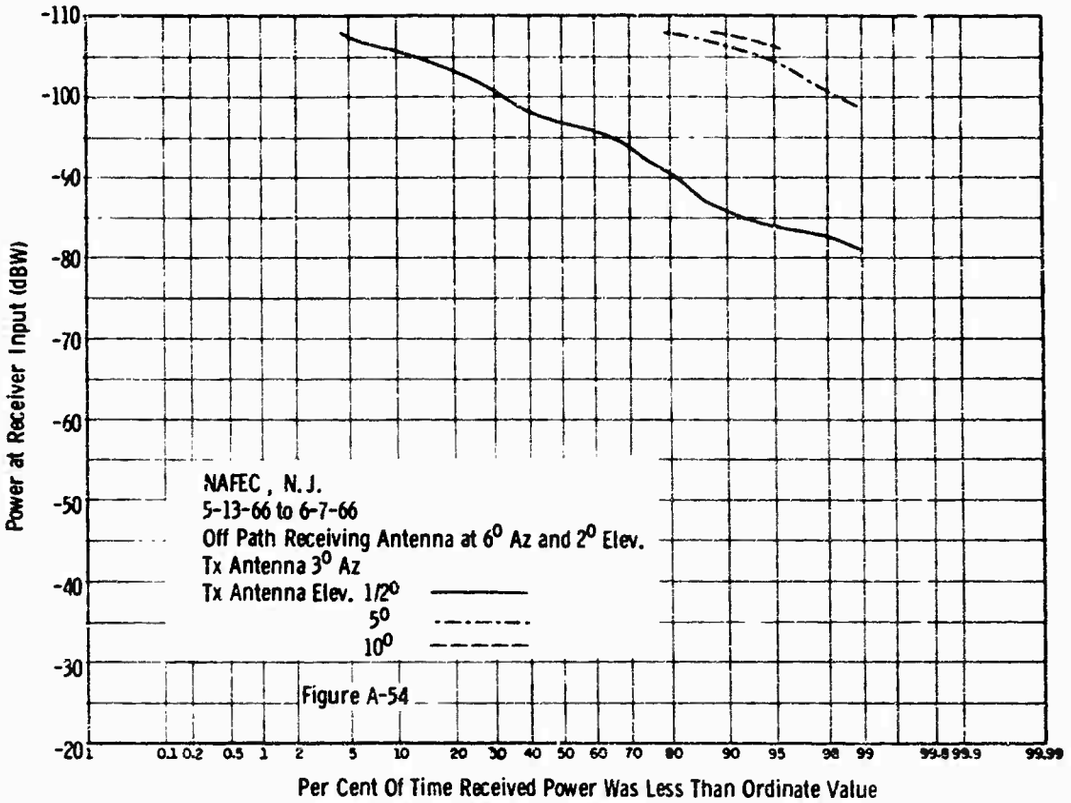



Figure A-54

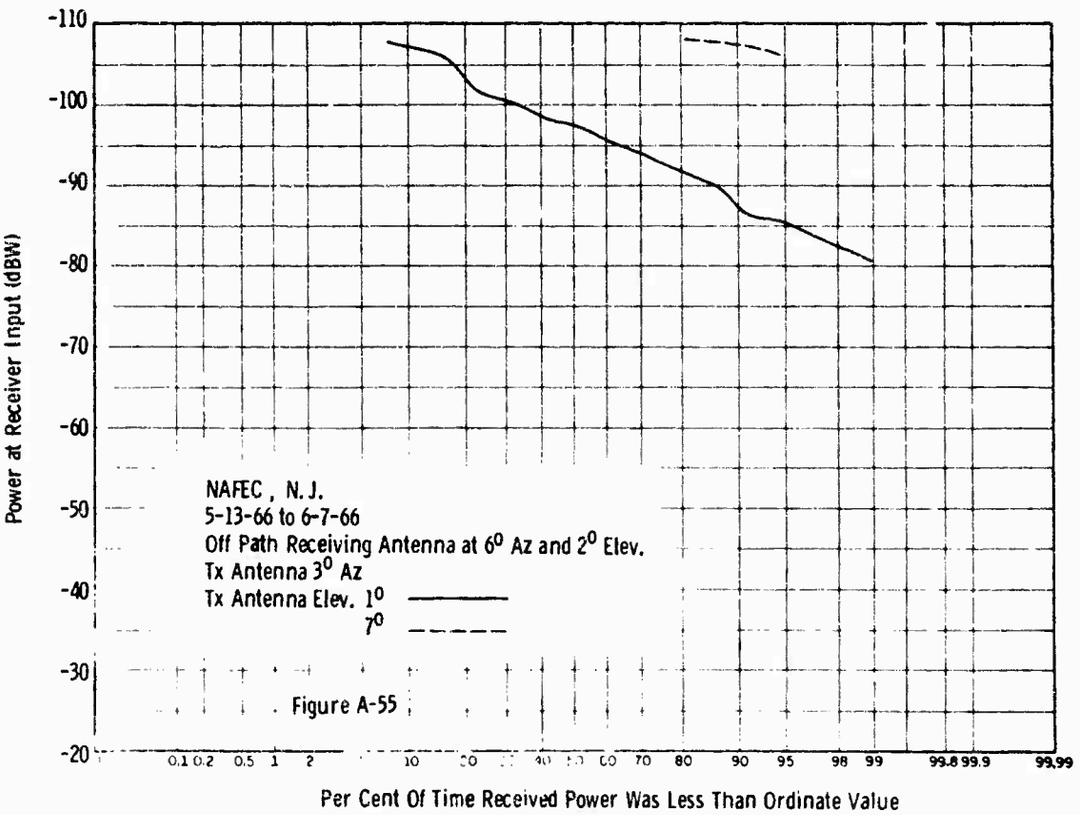



Figure A-55

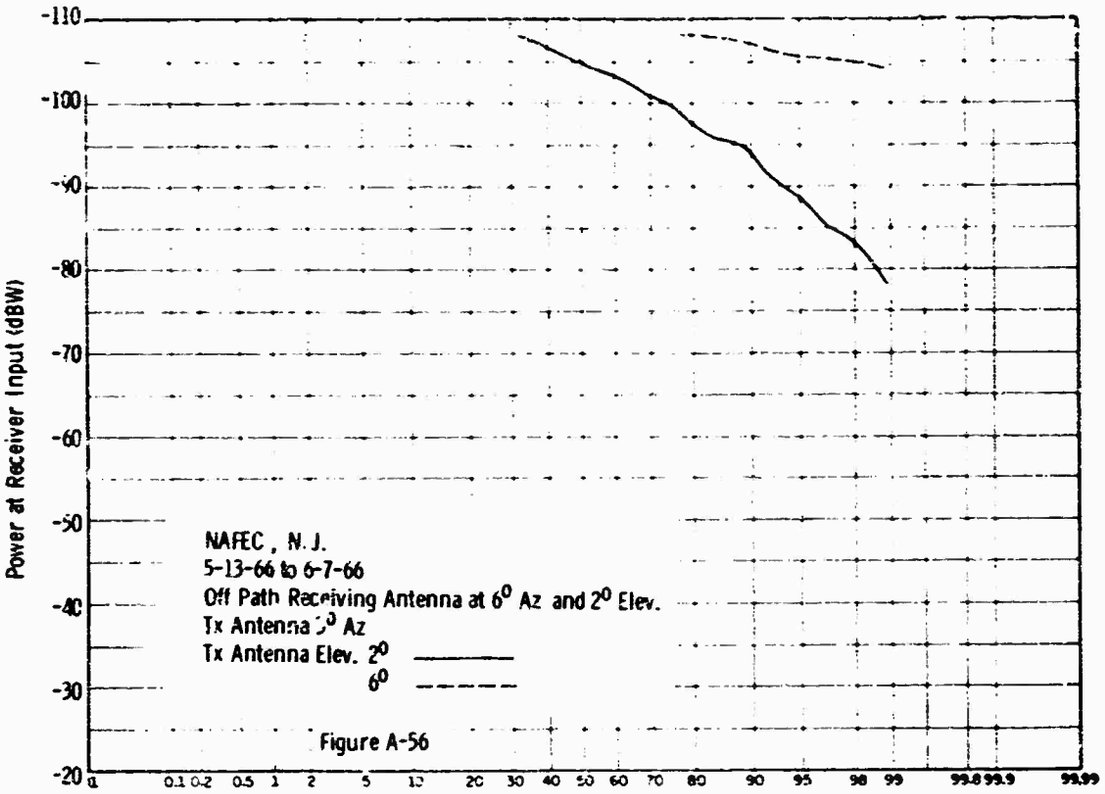



Figure A-56

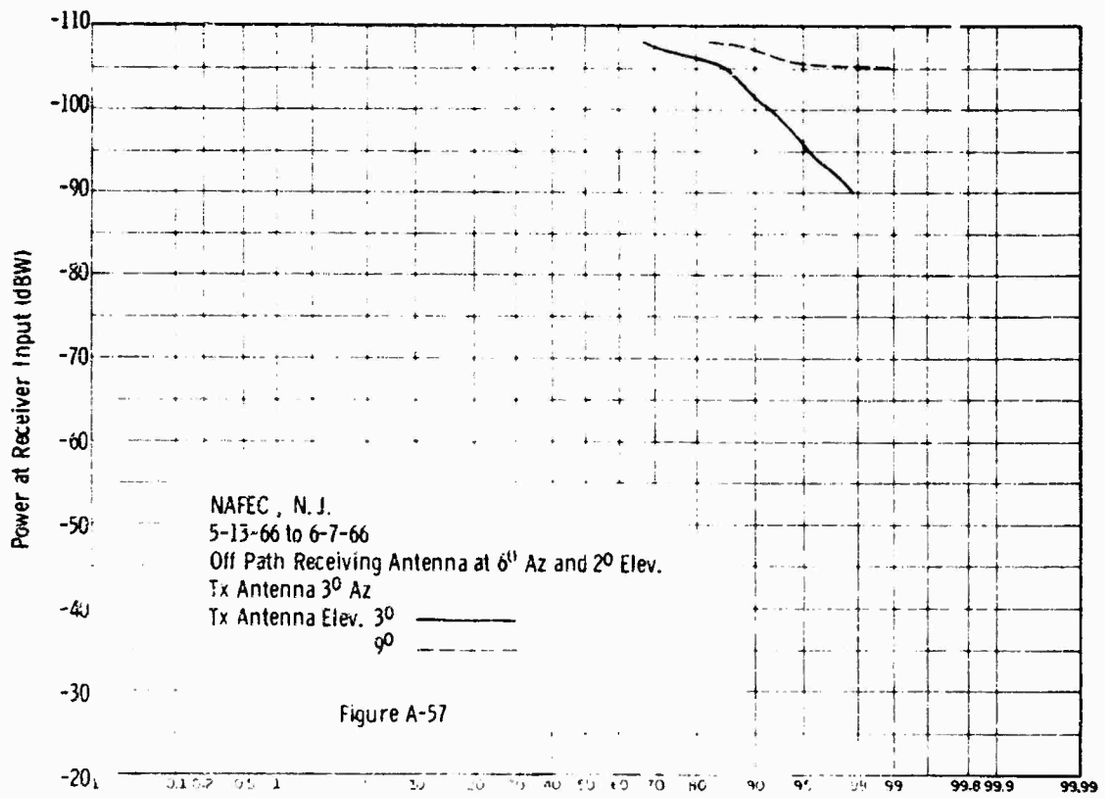



Figure A-57

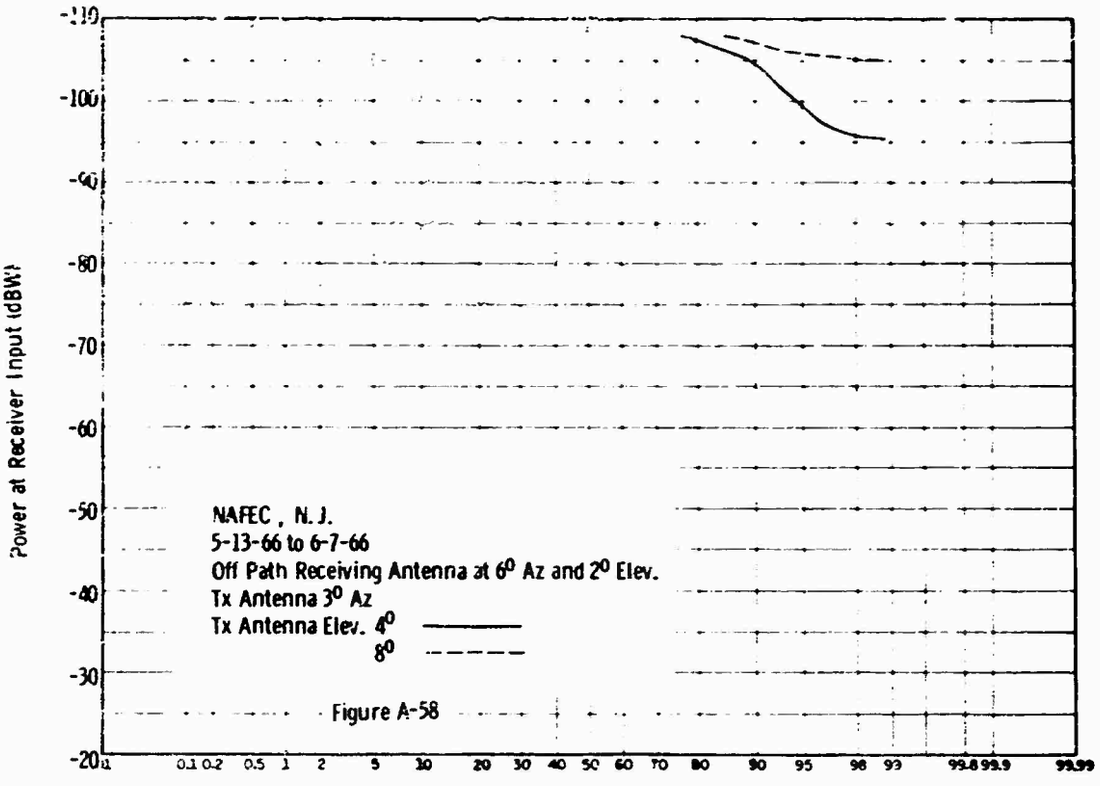



Figure A-58

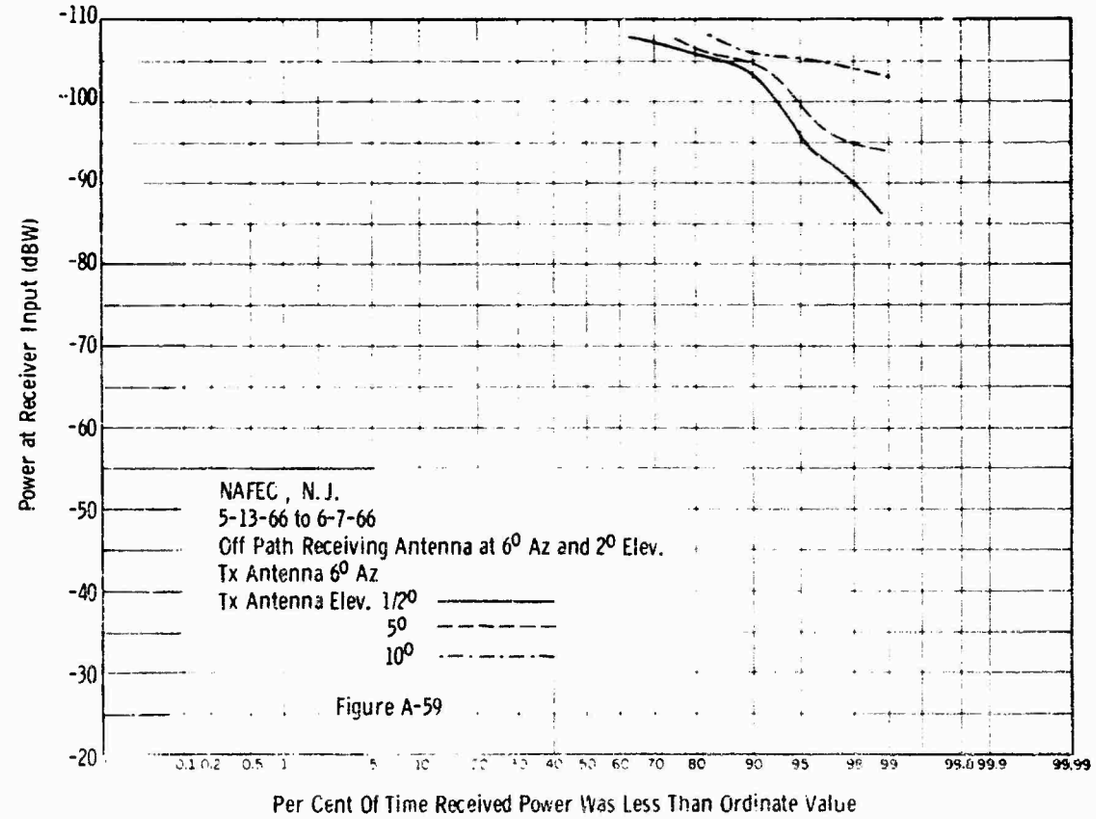



Figure A-59

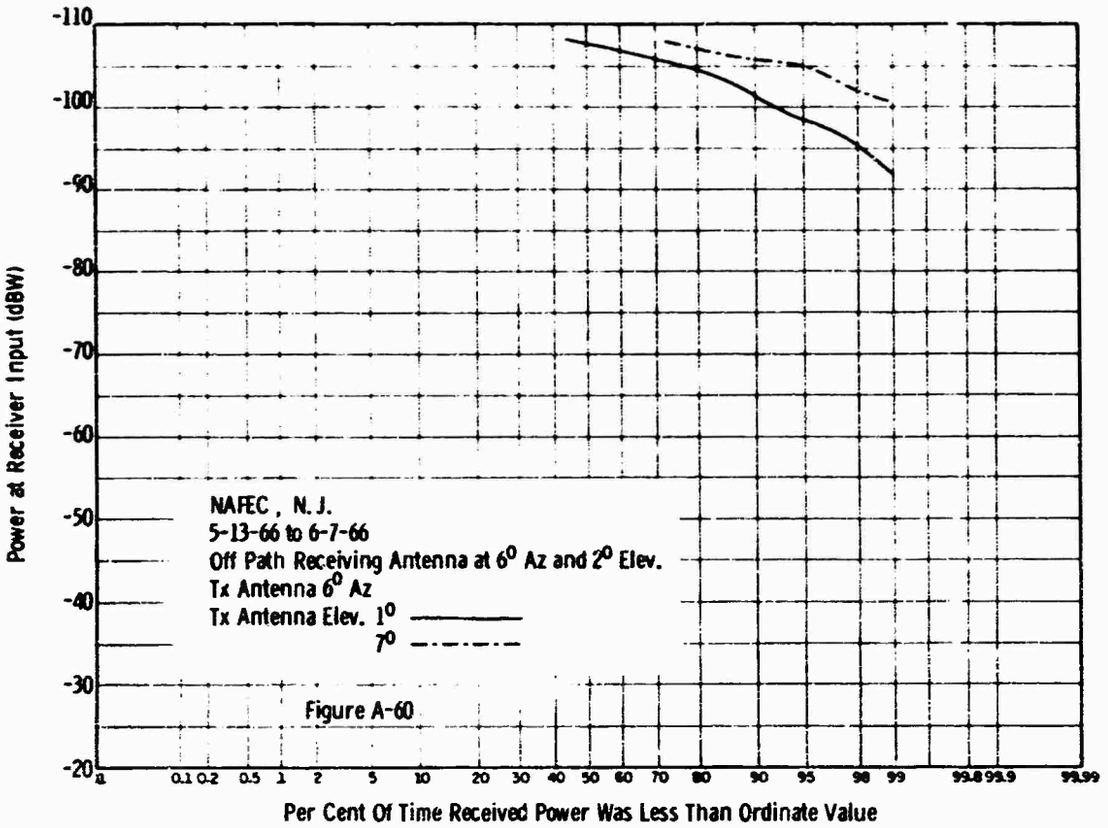



Figure A-60

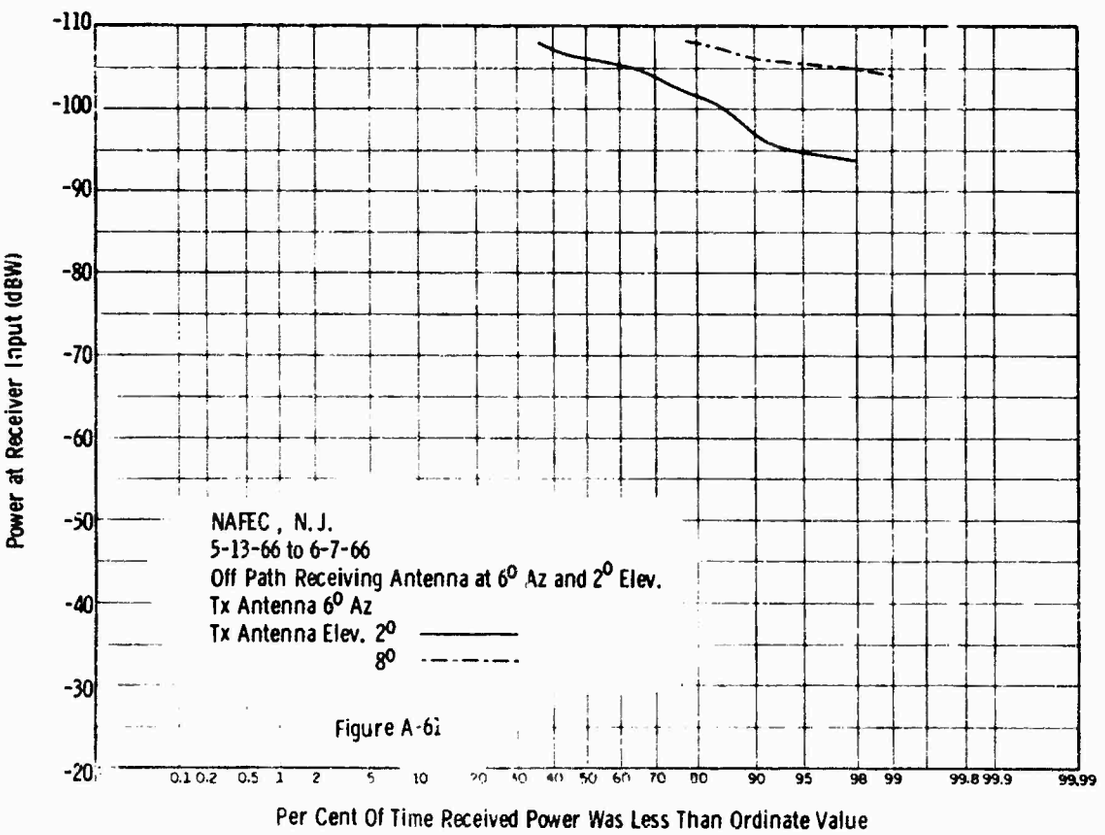



Figure A-61

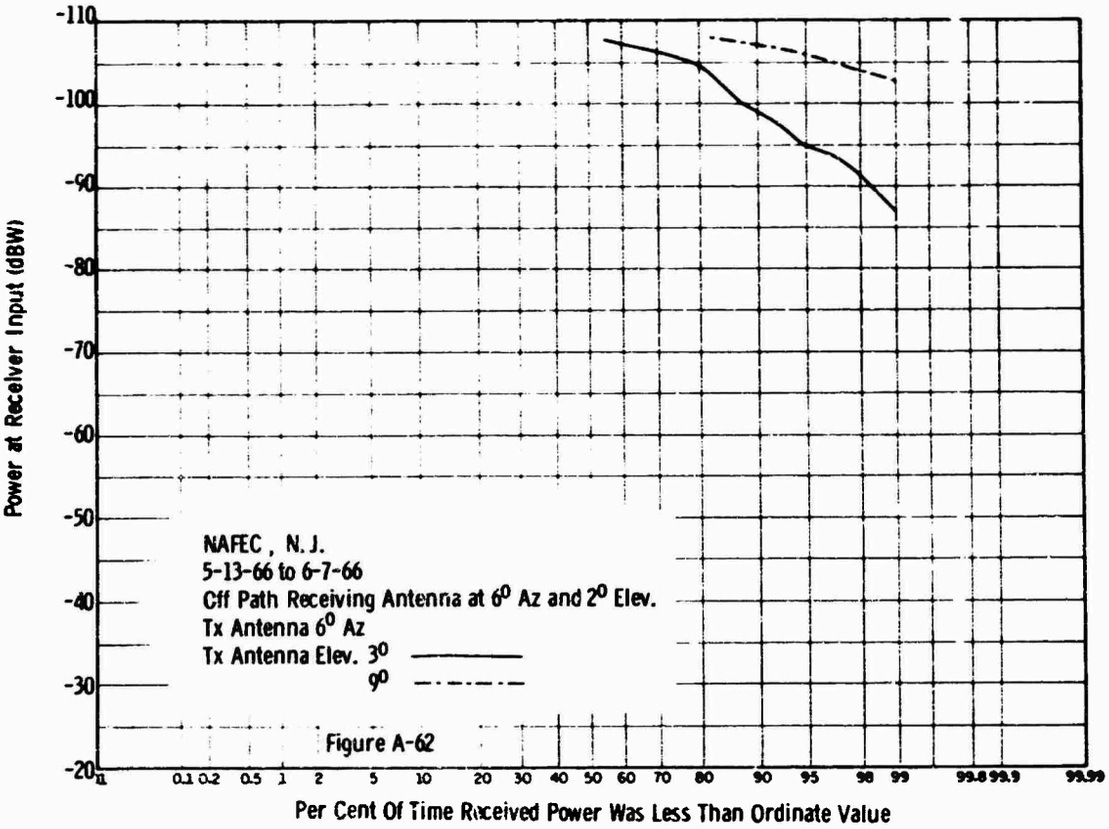



Figure A-62

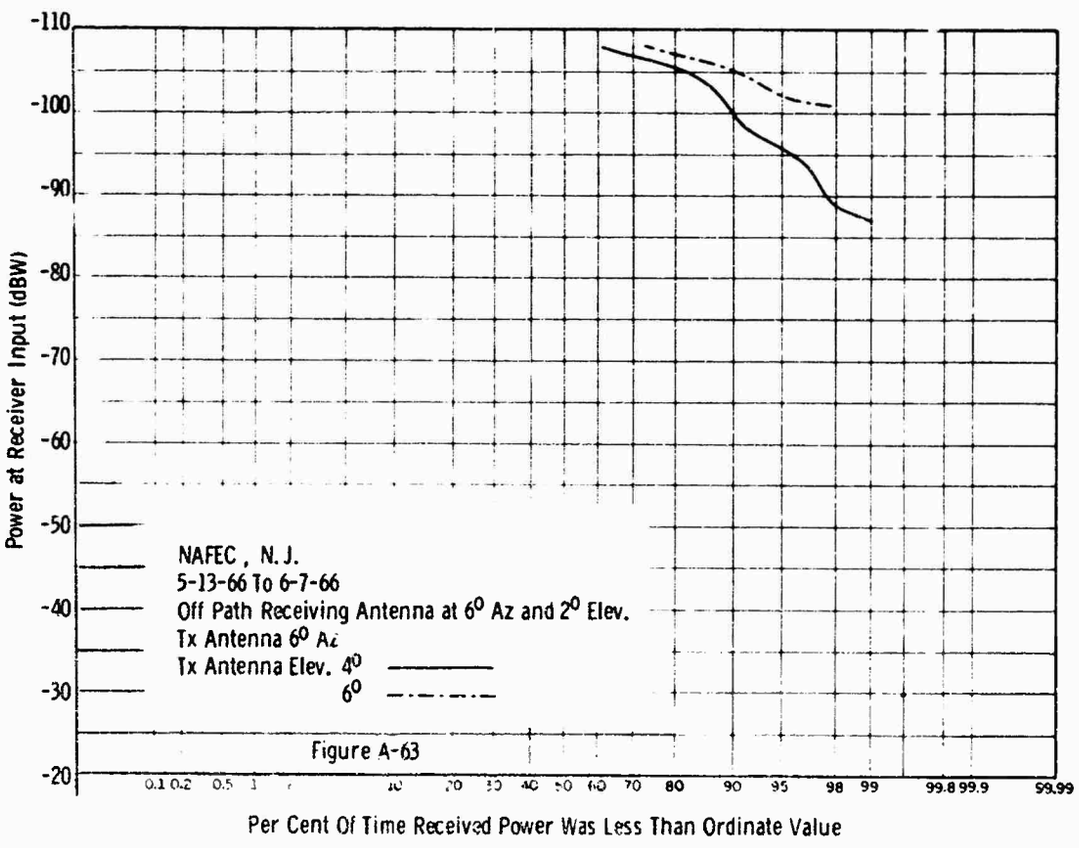
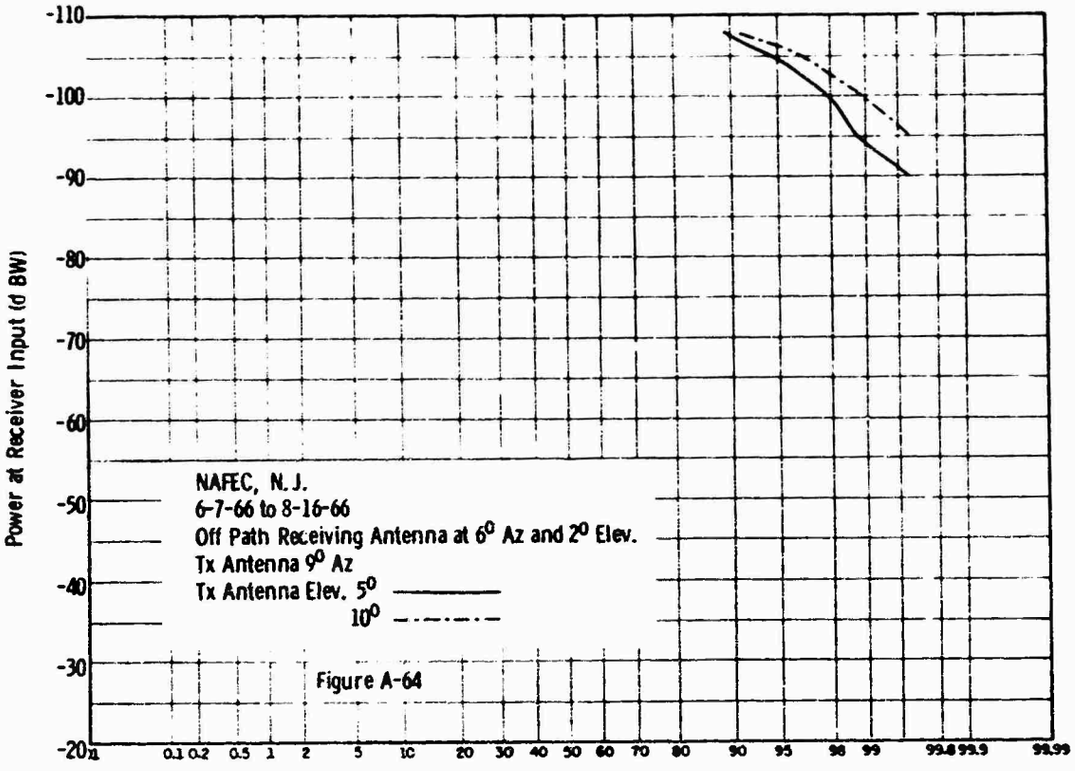
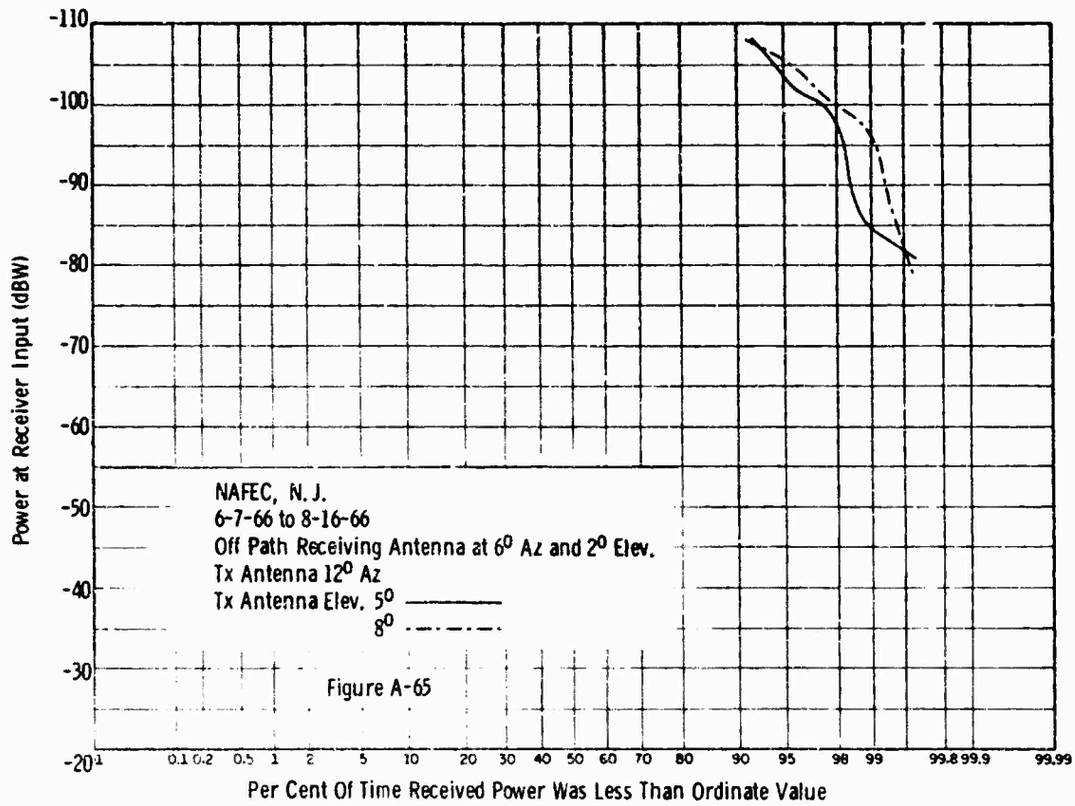



Figure A-63


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (d BW)
NAFEC, N.J.
6-7-66 to 8-16-66
Off Path Receiving Antenna at 6° Az and 2° Elev.
Tx Antenna 9° Az
Tx Antenna Elev. 5°
10°
Figure A-64
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
6-7-66 to 8-16-66
Off Path Receiving Antenna at 6° Az and 2° Elev.
Tx Antenna 12° Az
Tx Antenna Elev. 5°
8°
Figure A-65
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

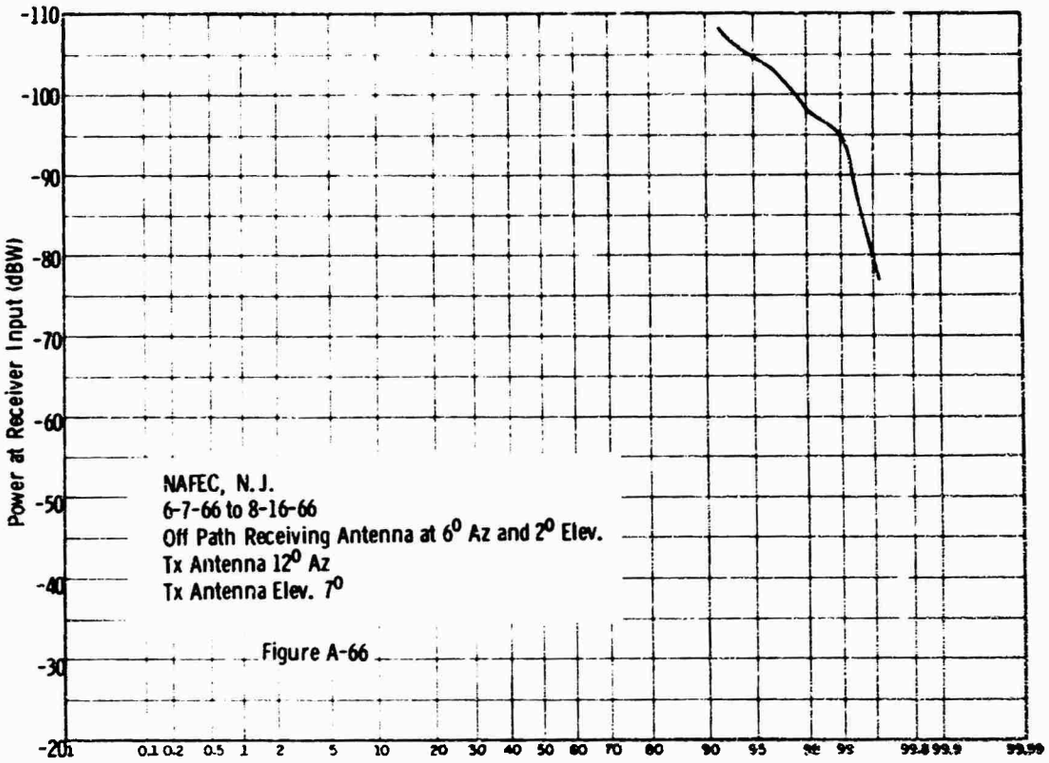



Figure A-66

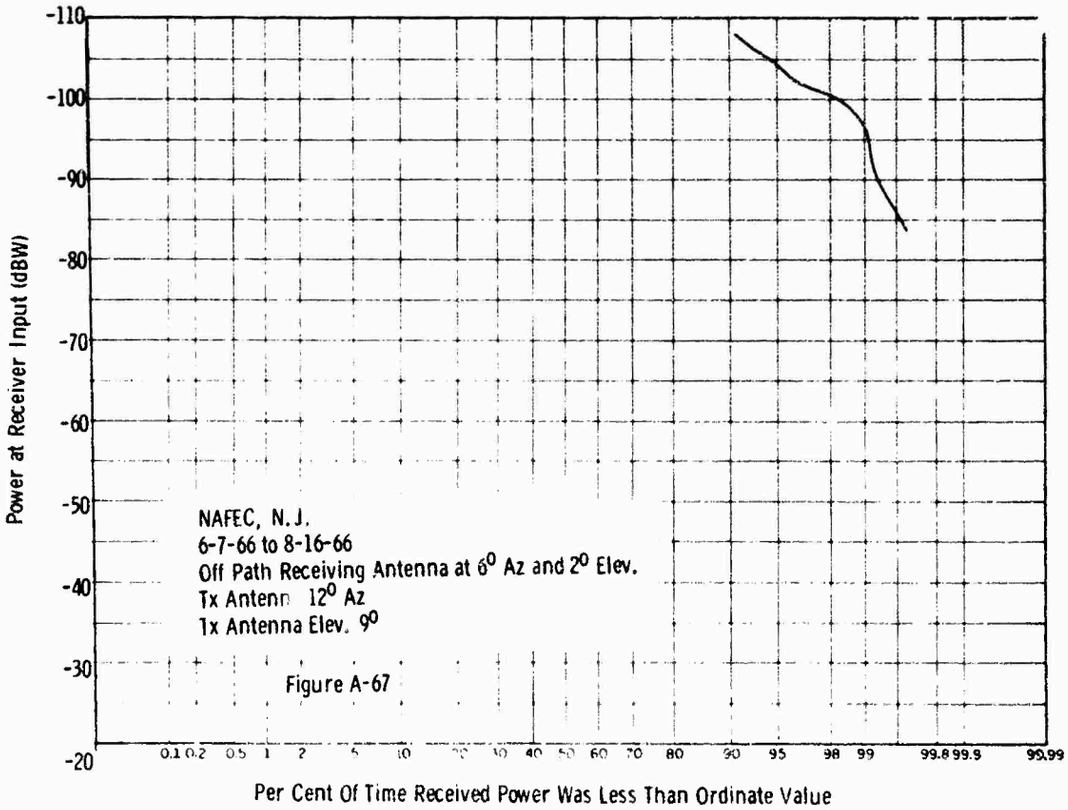



Figure A-67

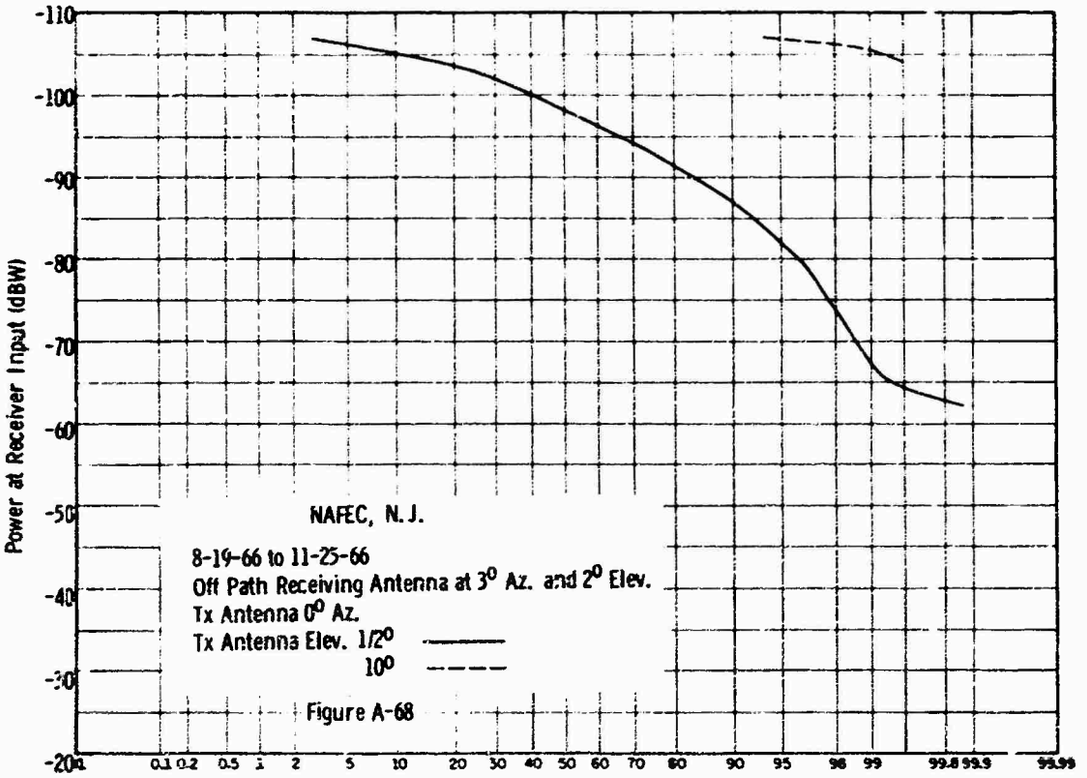



Figure A-68

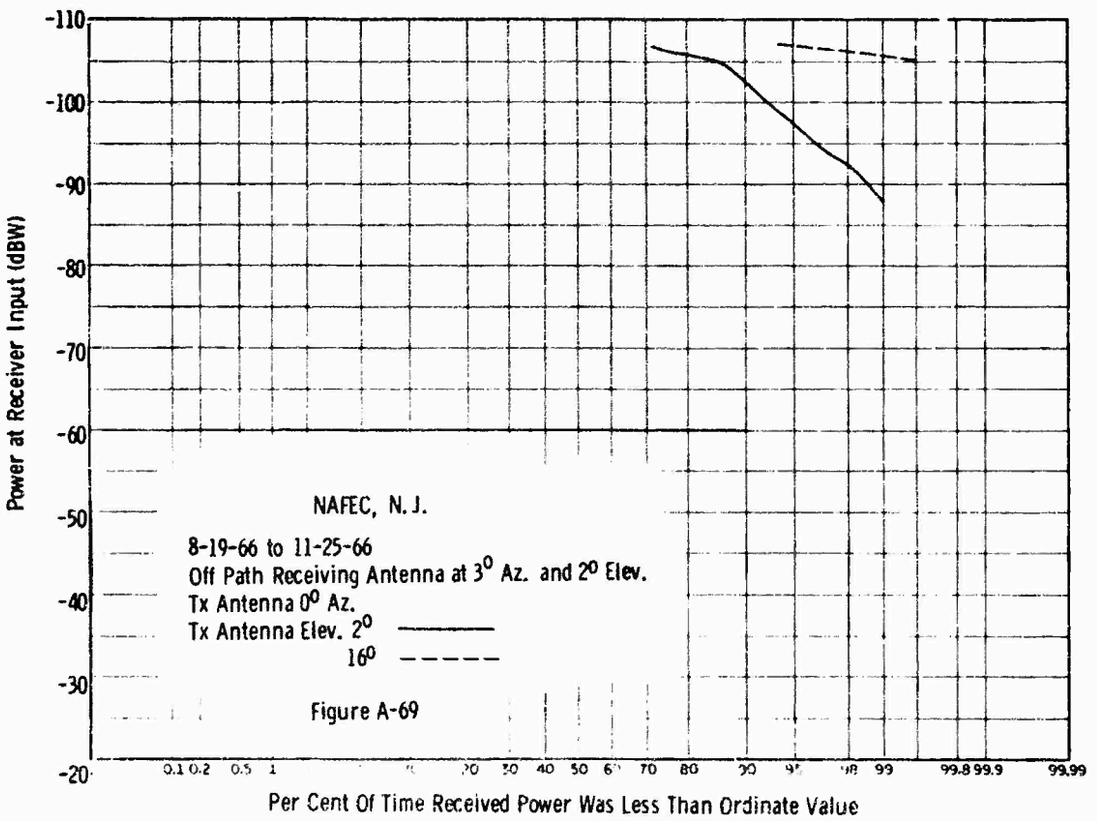



Figure A-69

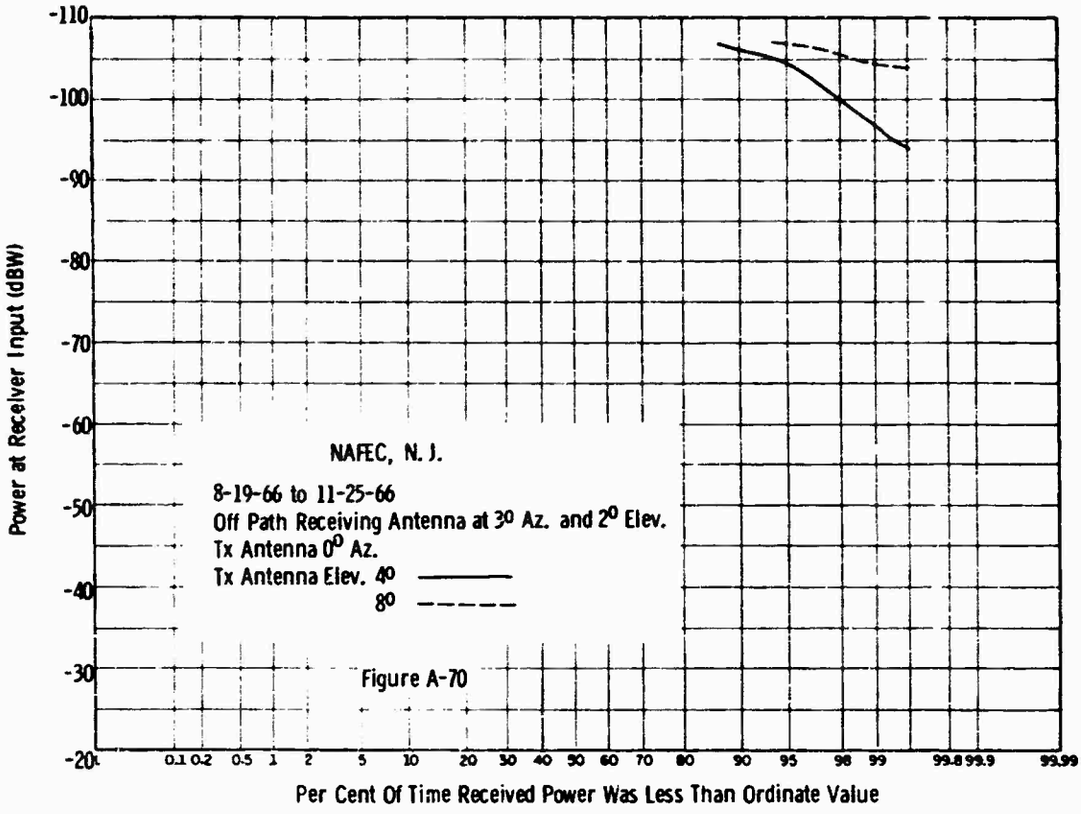



Figure A-70

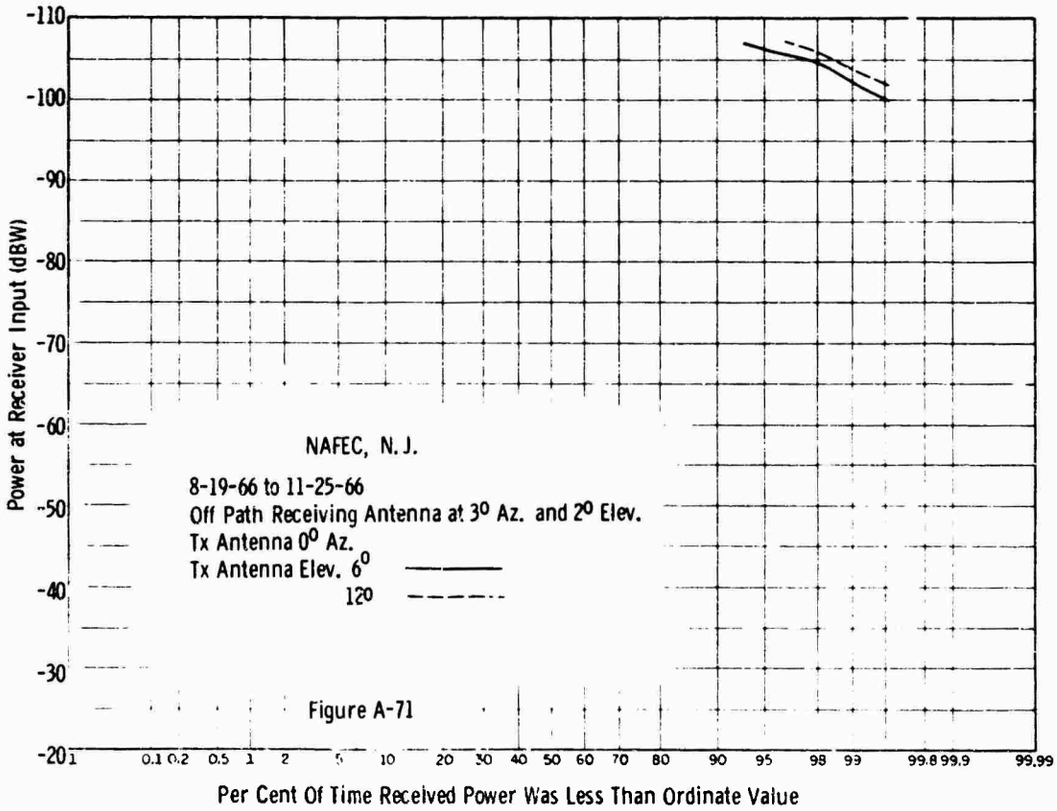



Figure A-71

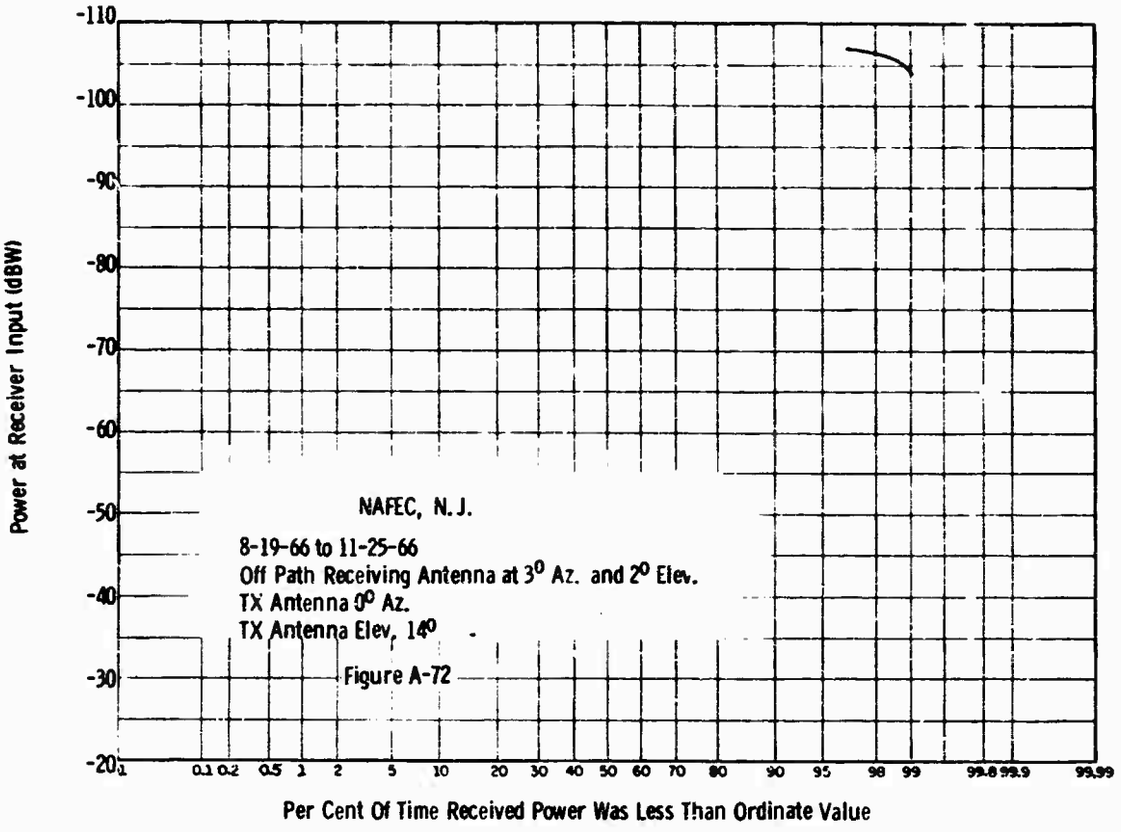



Figure A-72

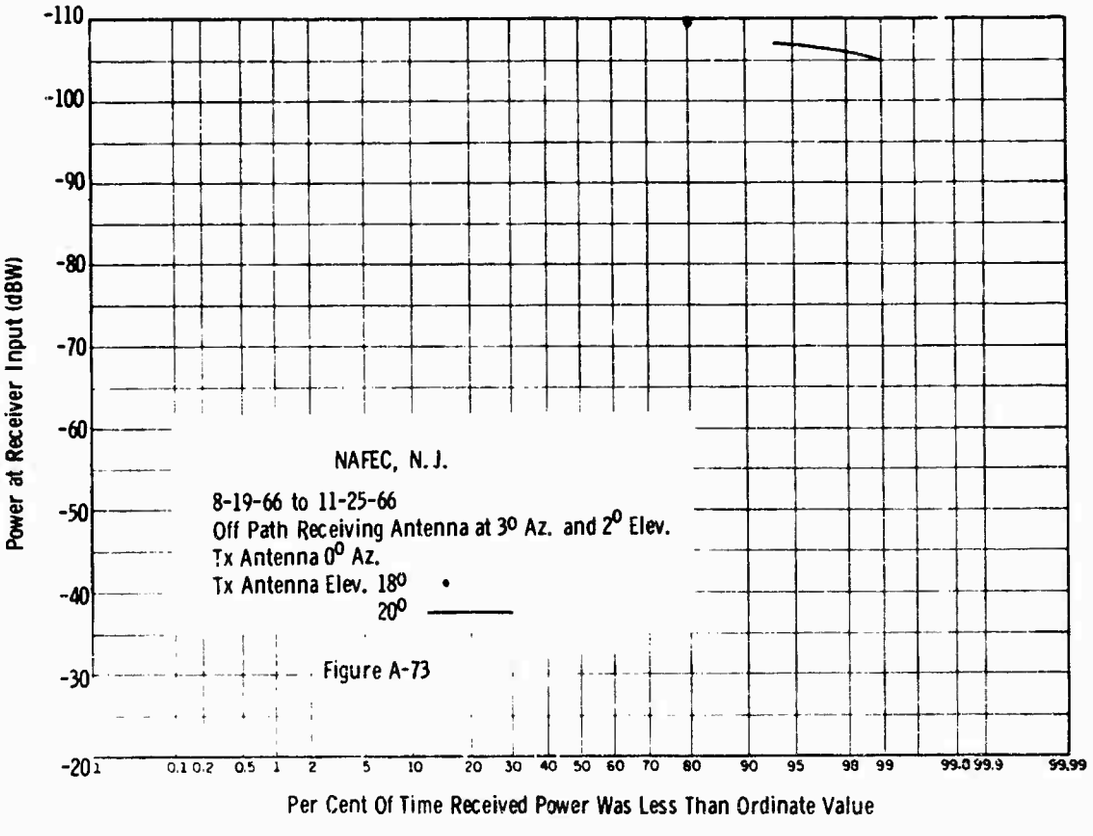



Figure A-73

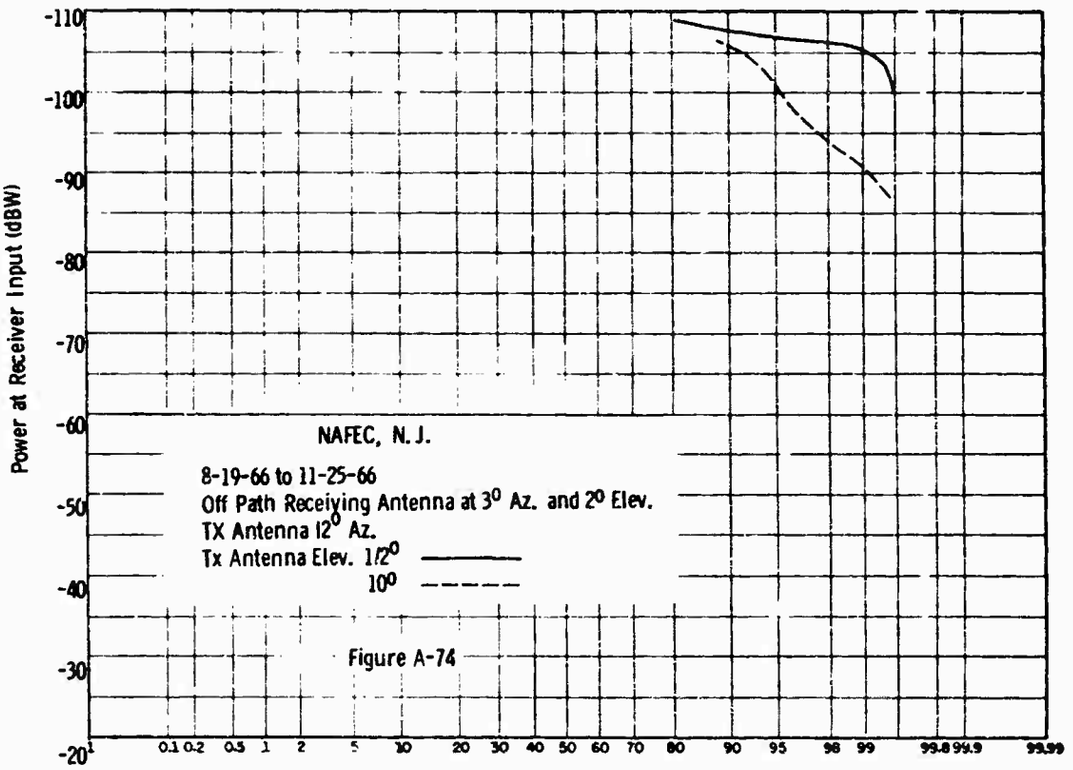



Figure A-74

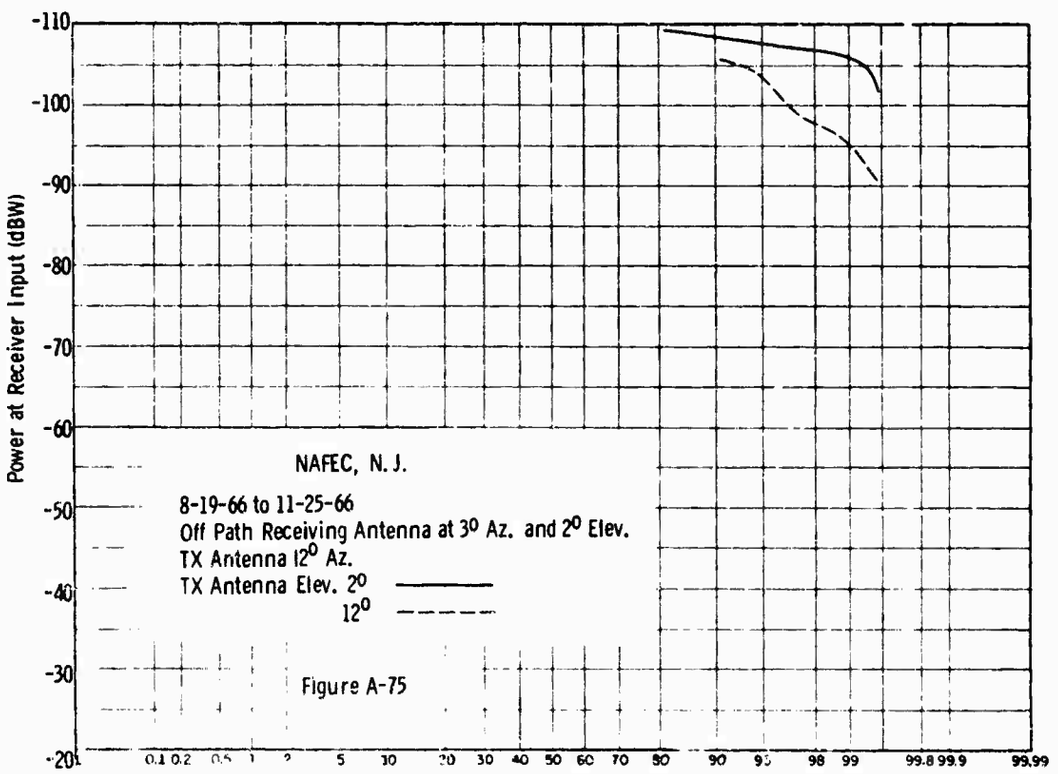



Figure A-75

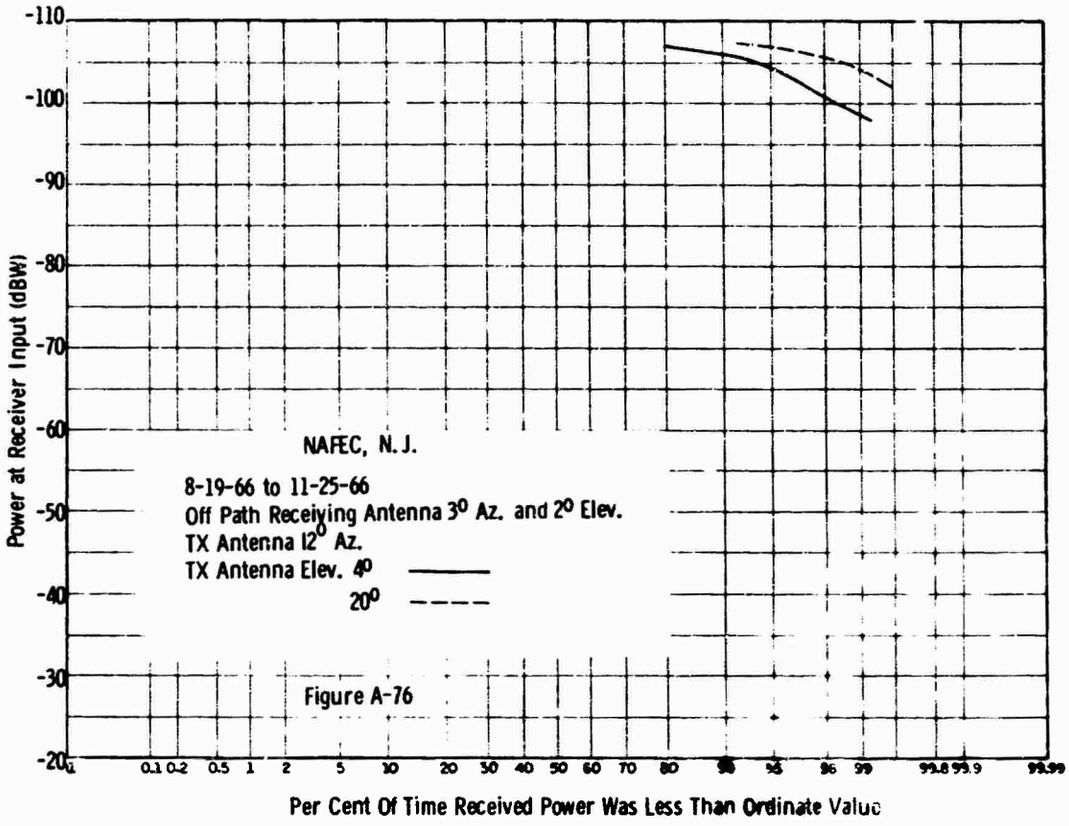



Figure A-76

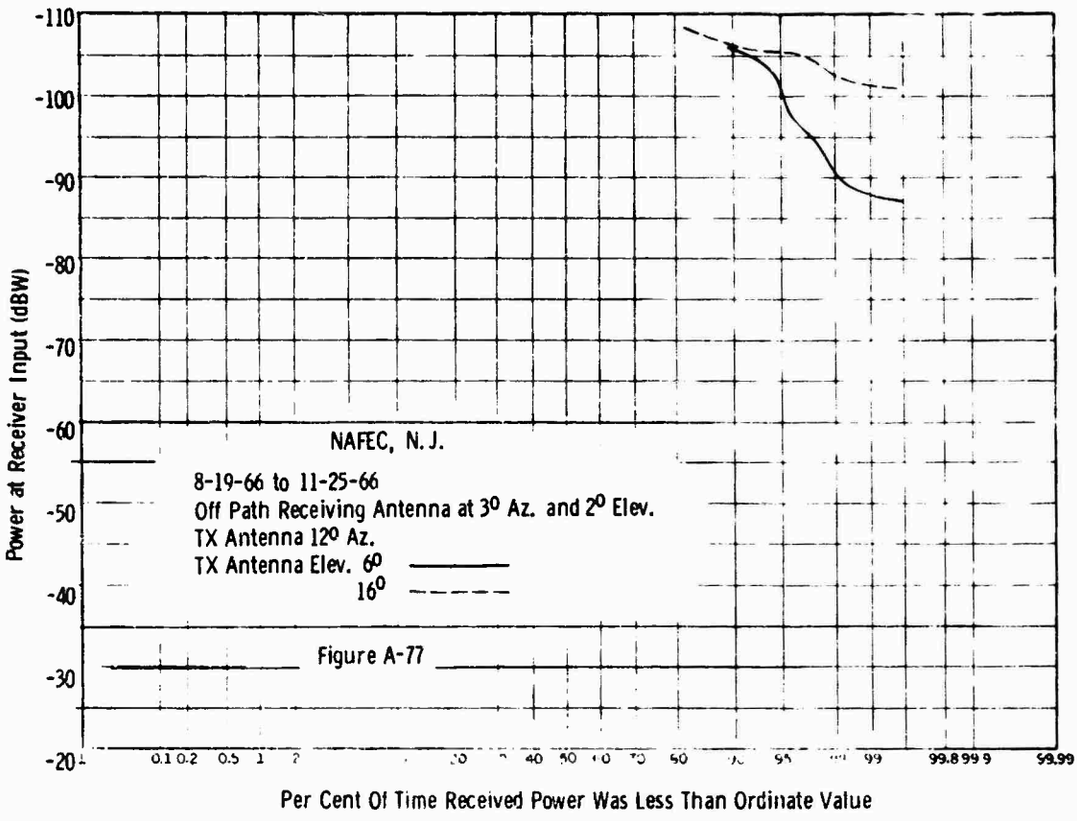



Figure A-77

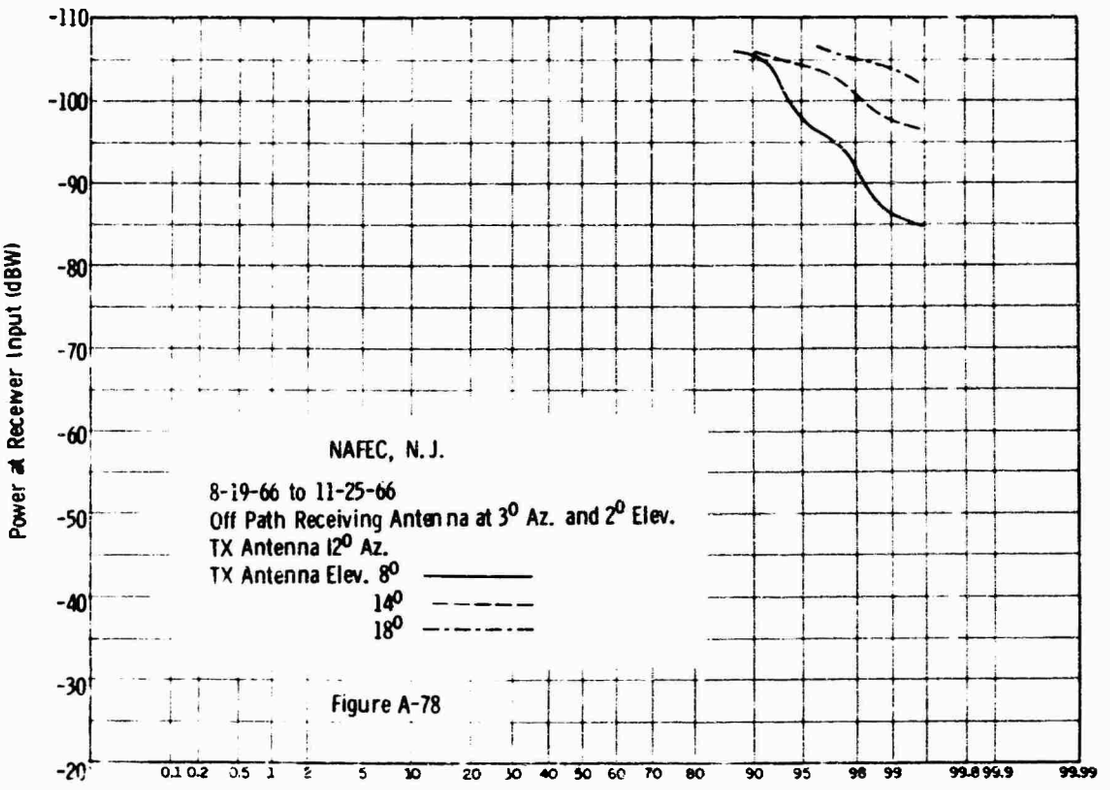



Figure A-78

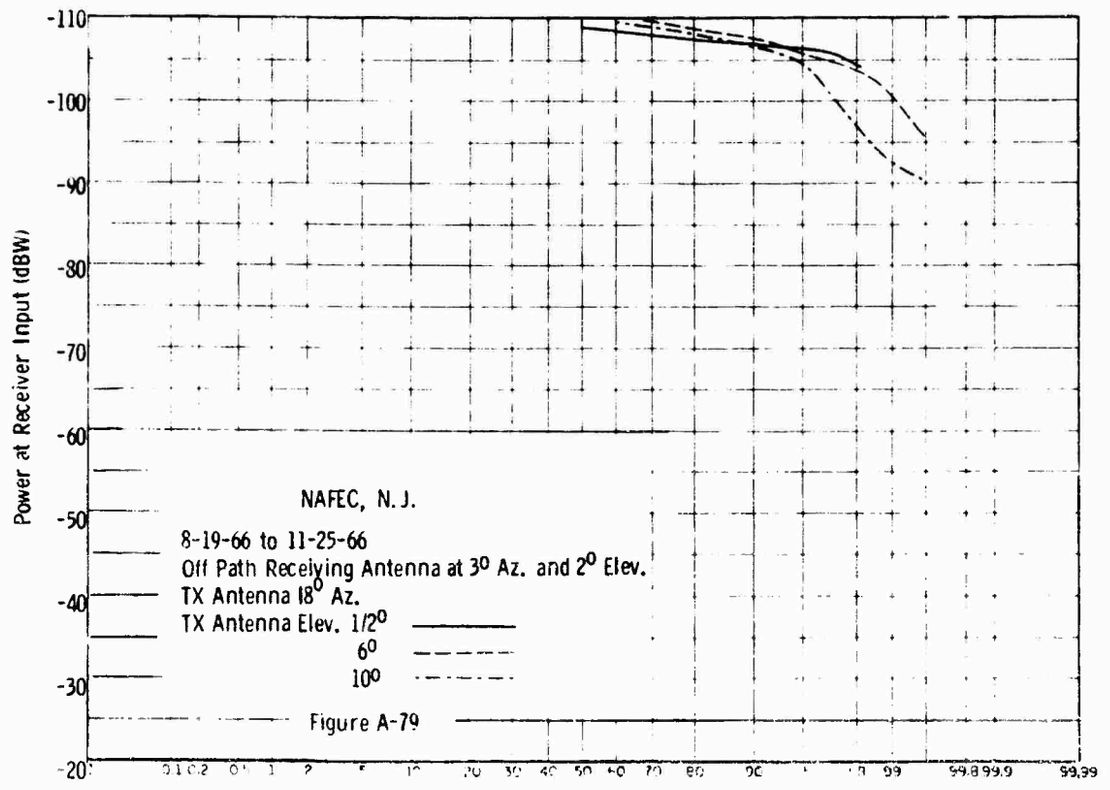



Figure A-79

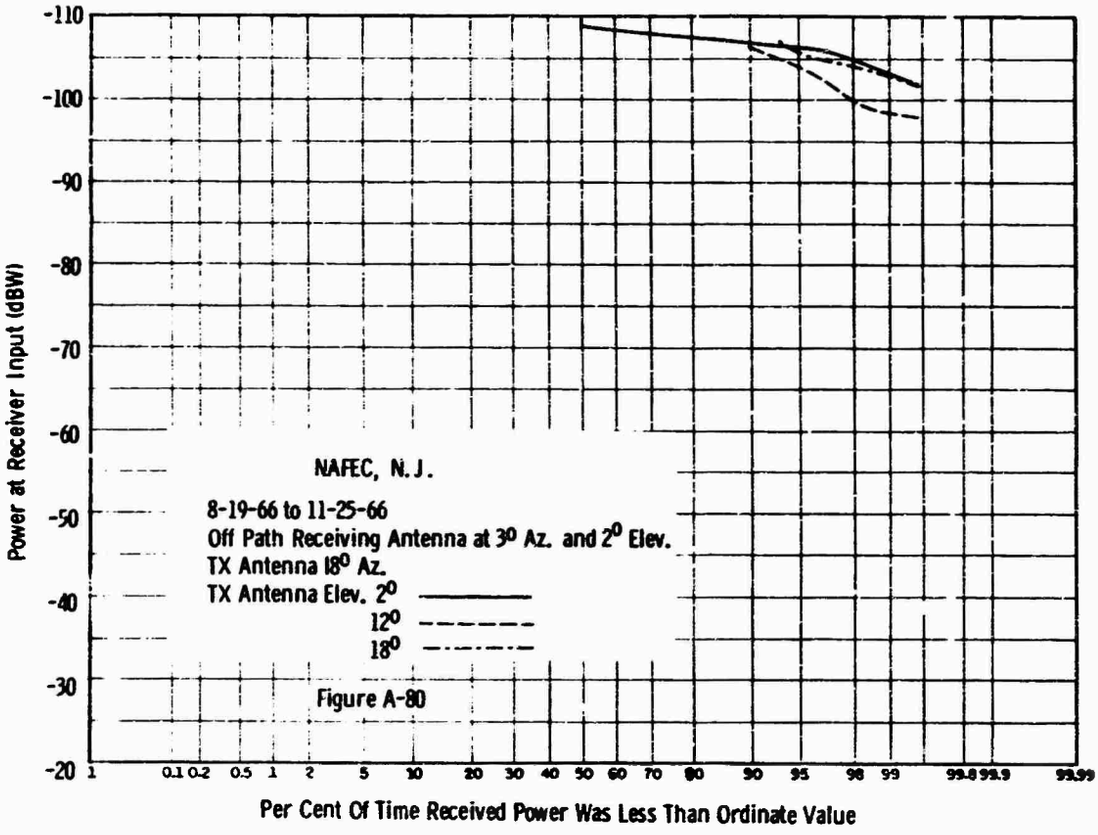



Figure A-80

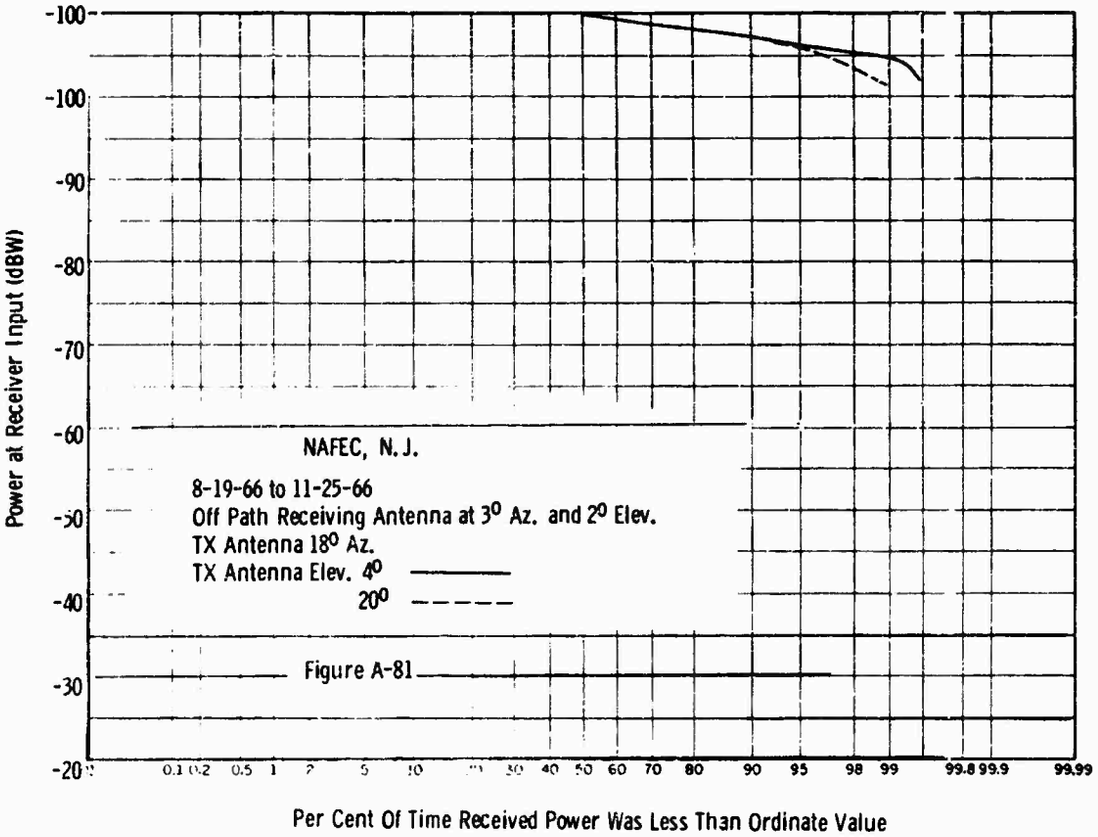



Figure A-81

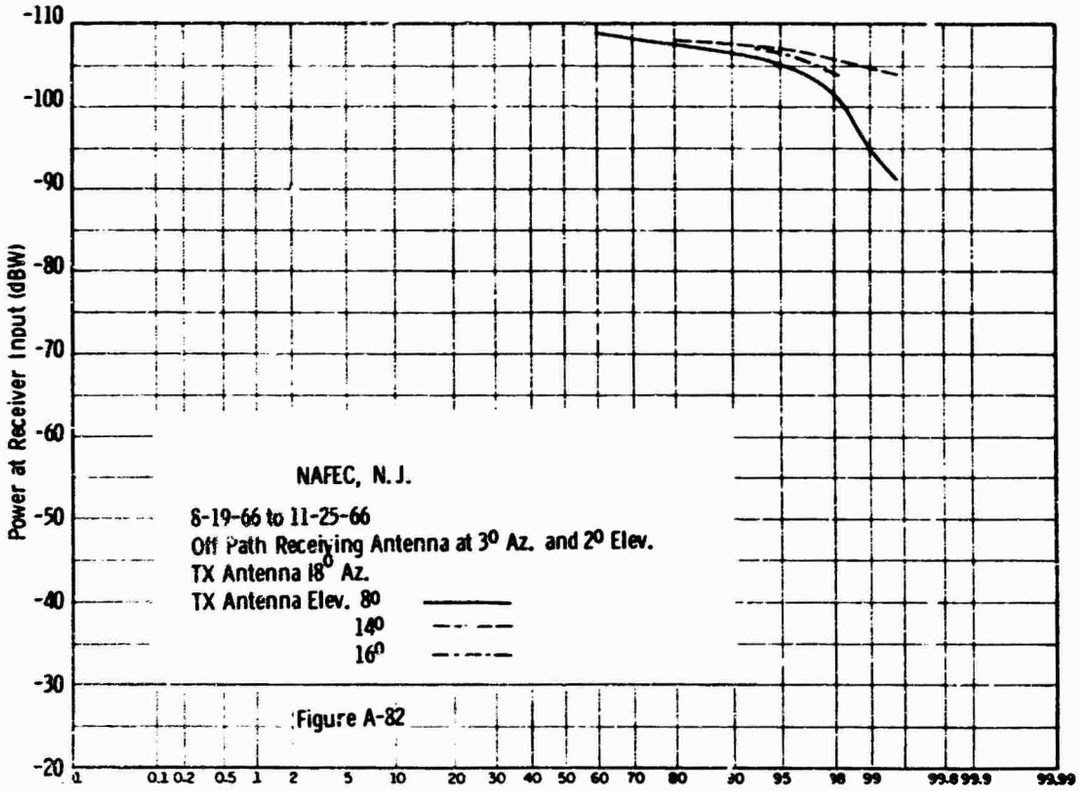



Figure A-82

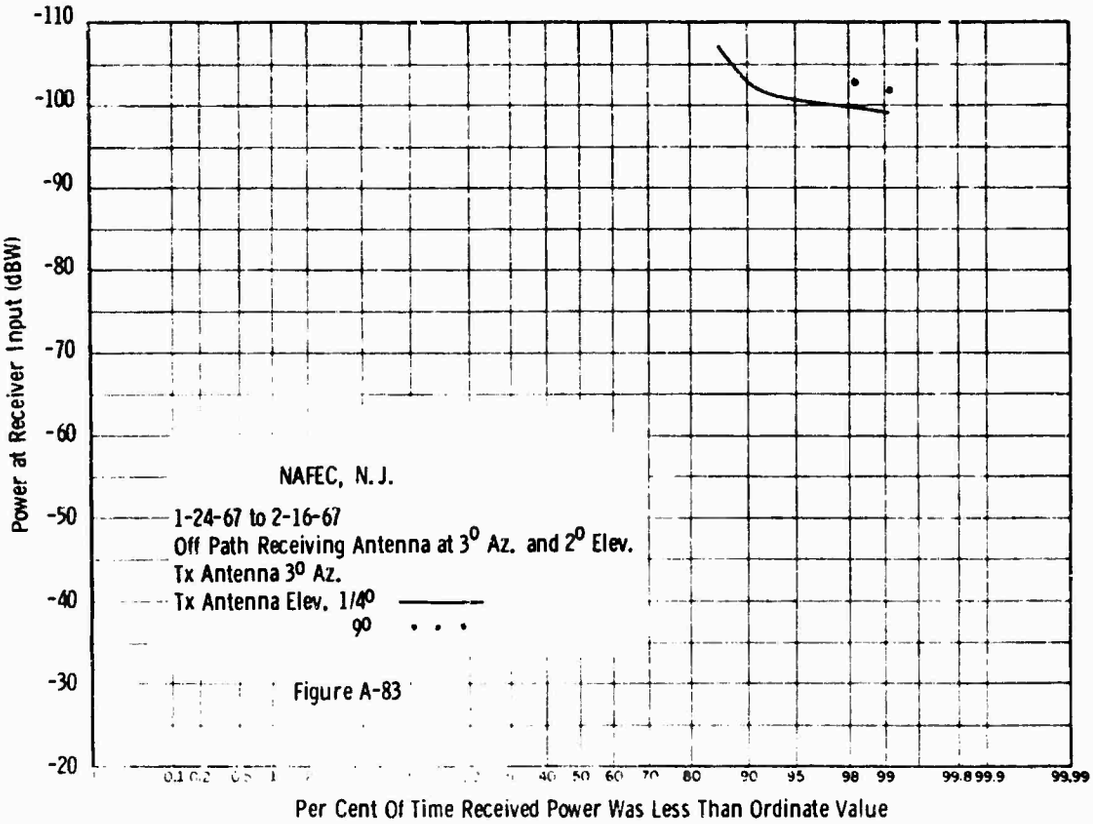



Figure A-83

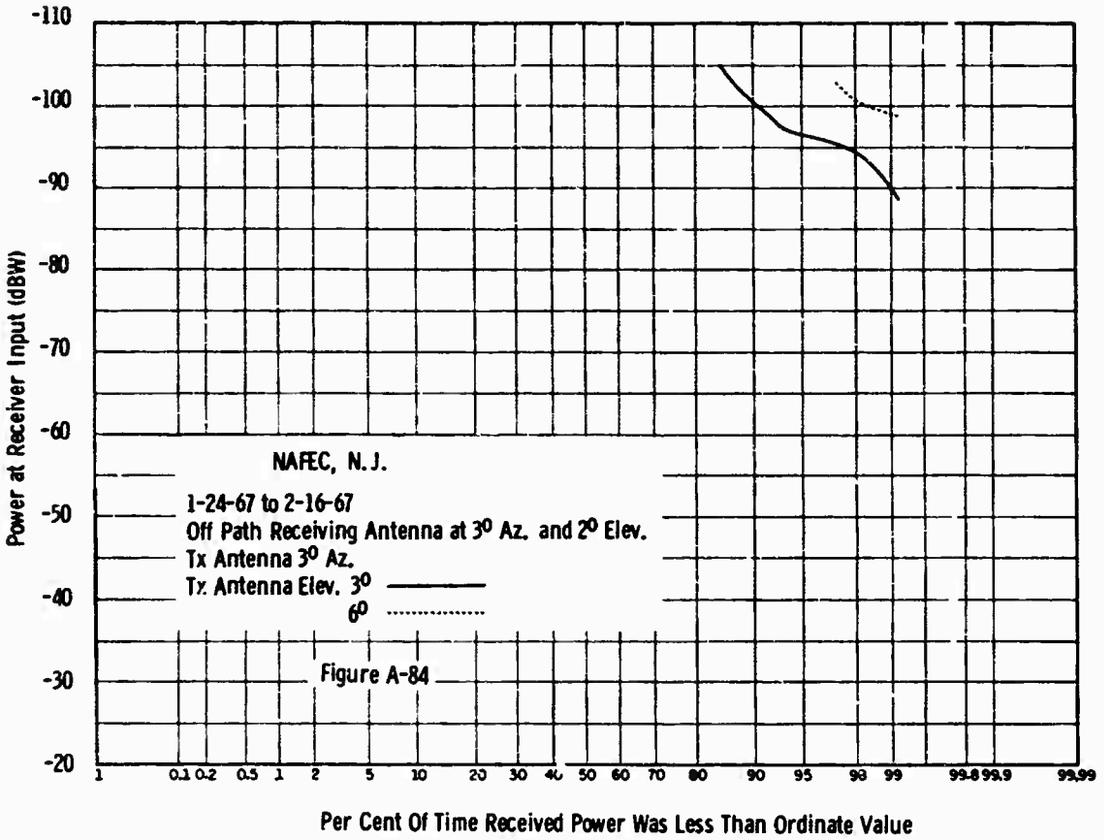
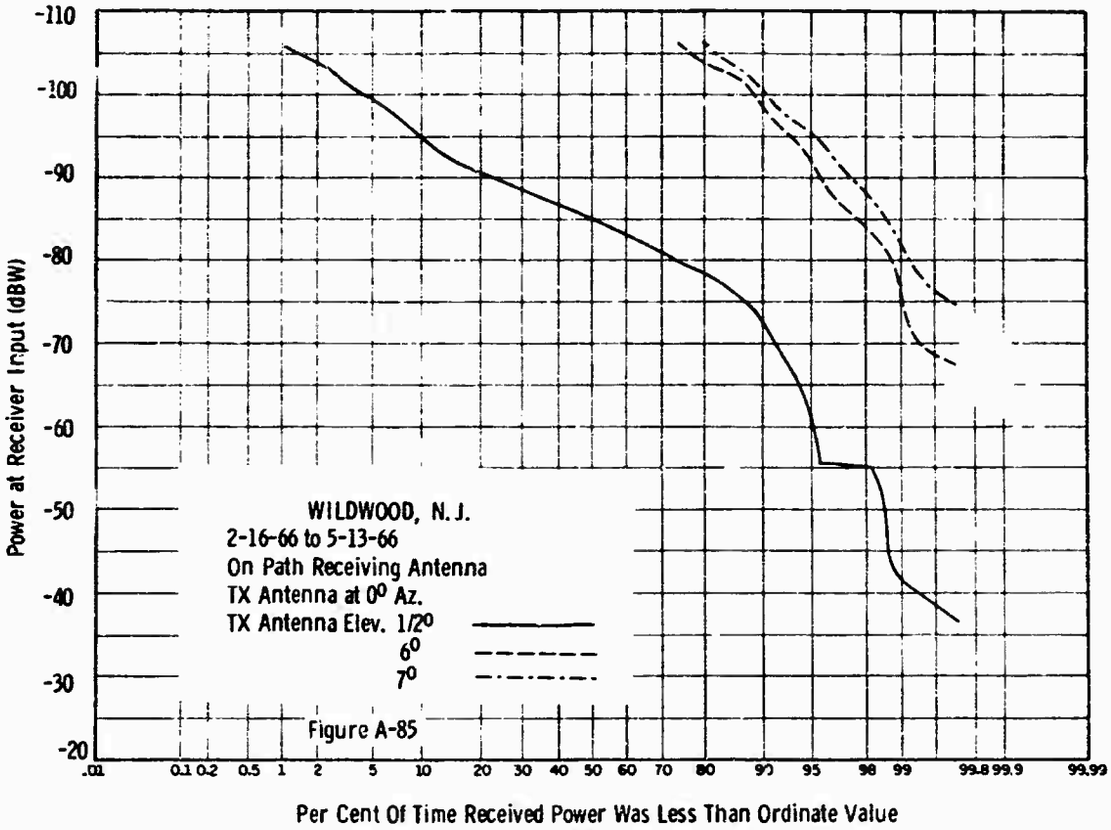
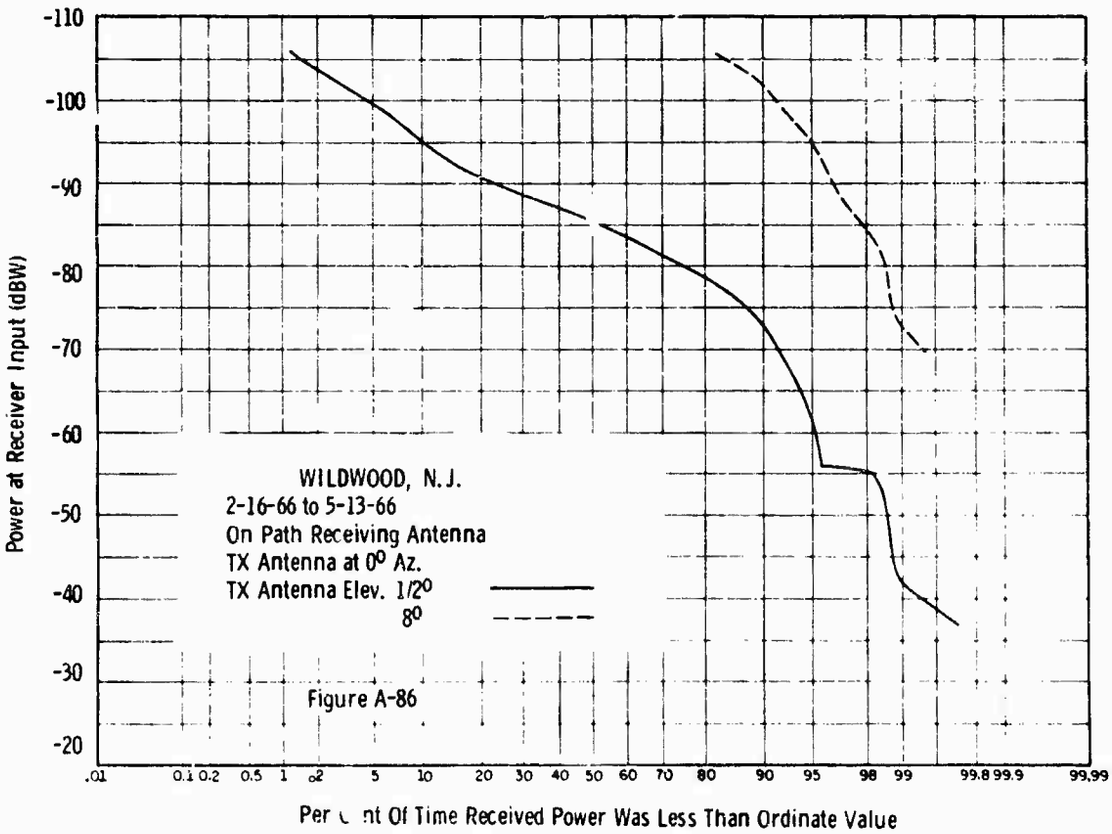

-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
NAFEC, N.J.
1-24-67 to 2-16-67
Off Path Receiving Antenna at 3° Az. and 2° Elev.
Tx Antenna 3° Az.
Tx Antenna Elev. 3°
6°
1
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

Figure A-84


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
2-16-66 to 5-13-66
On Path Receiving Antenna
TX Antenna at 0° Az.
TX Antenna Elev. 1/2°
6°
7°
Figure A-85
.01 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
2-16-66 to 5-13-66
On Path Receiving Antenna
TX Antenna at 0° Az.
TX Antenna Elev. 1/2°
8°
Figure A-86
.01 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

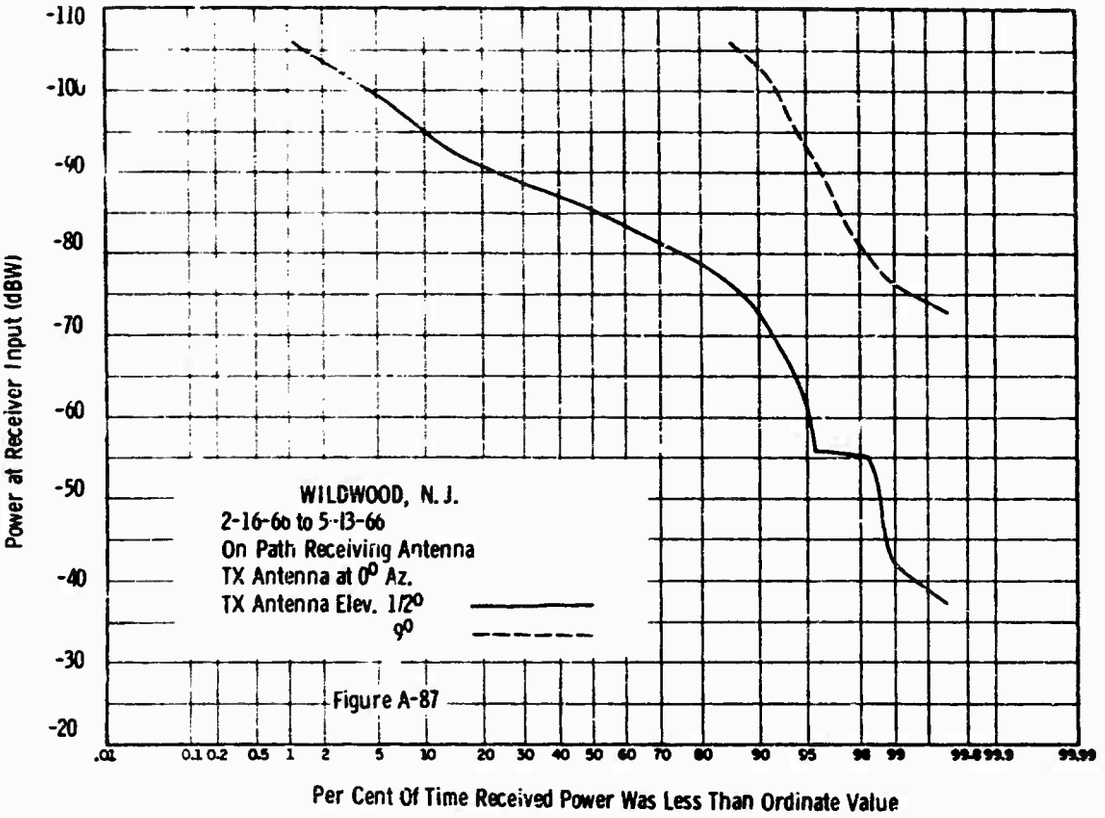



Figure A-87

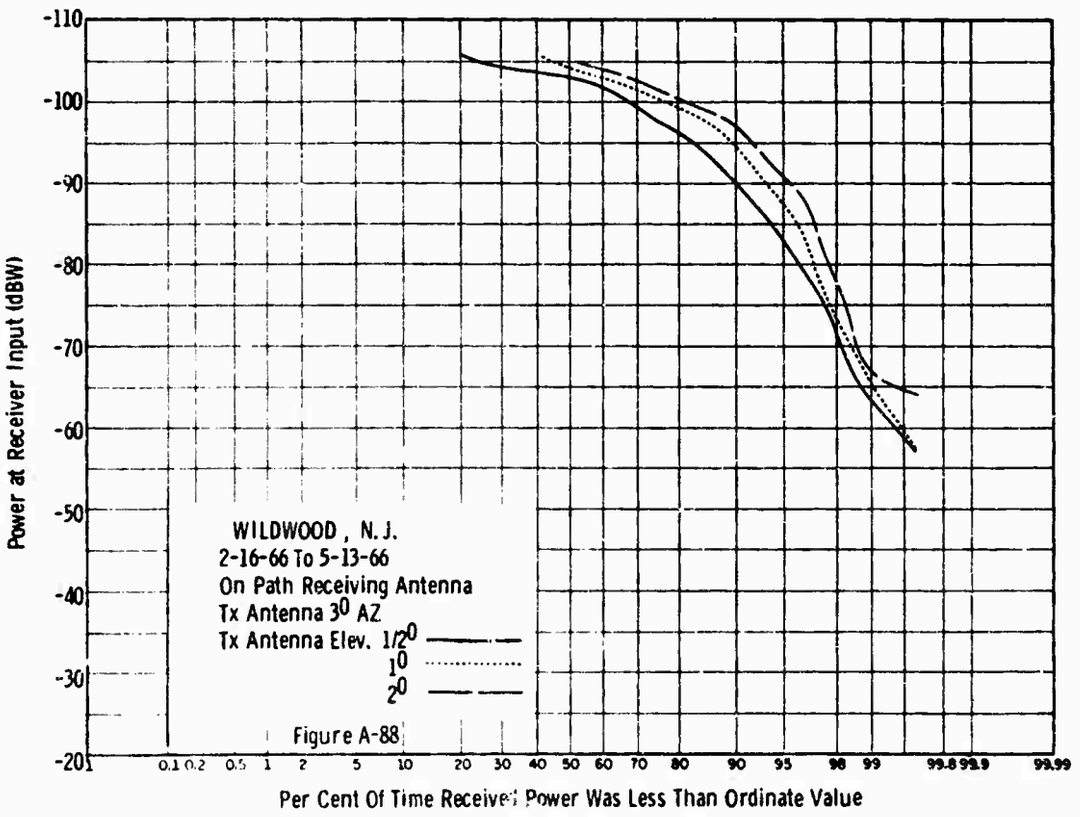



Figure A-88

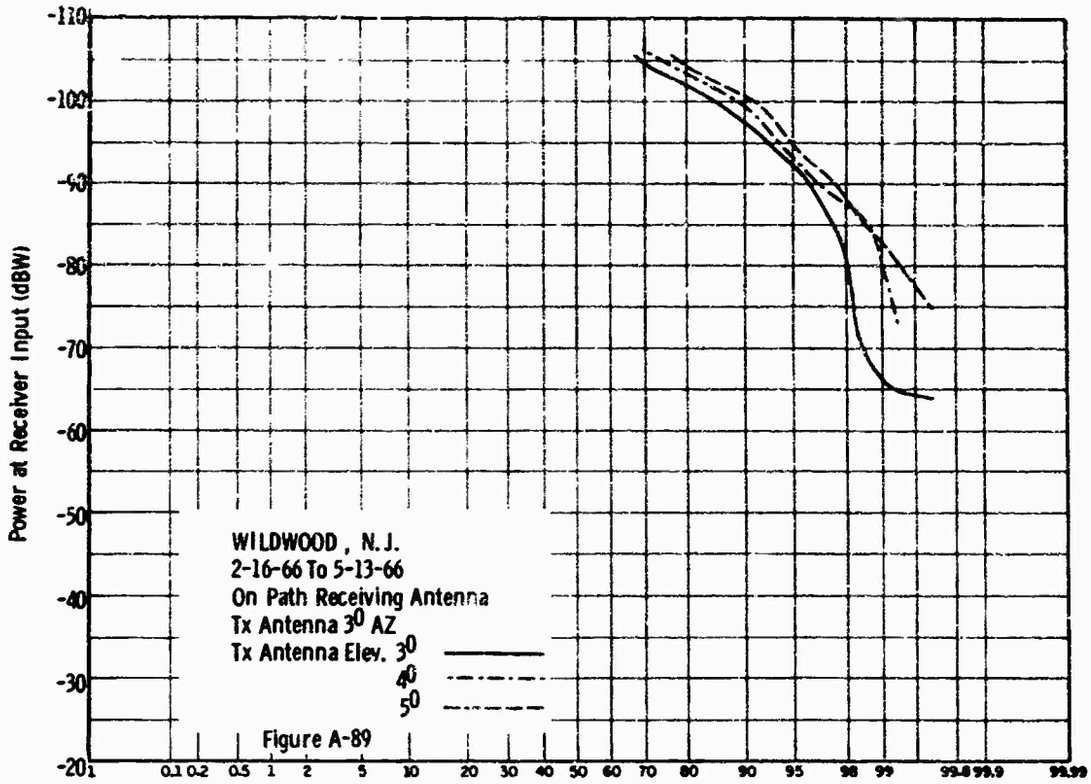



Figure A-89

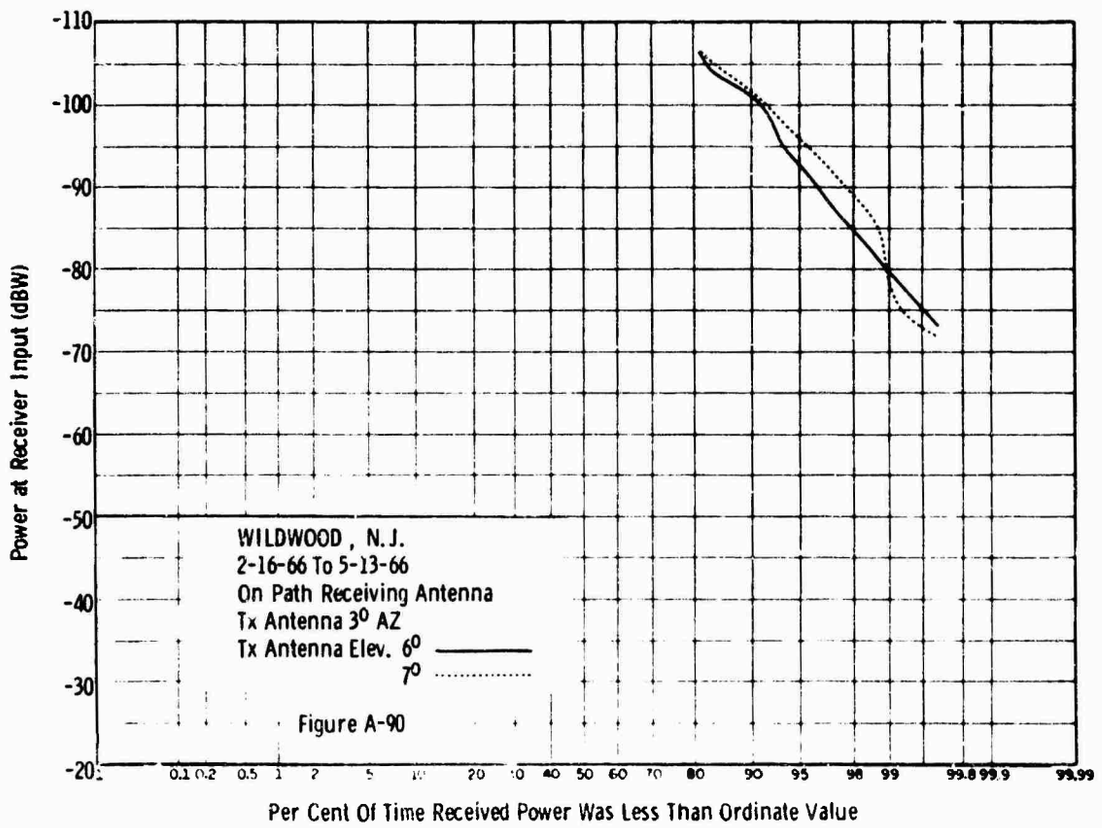



Figure A-90

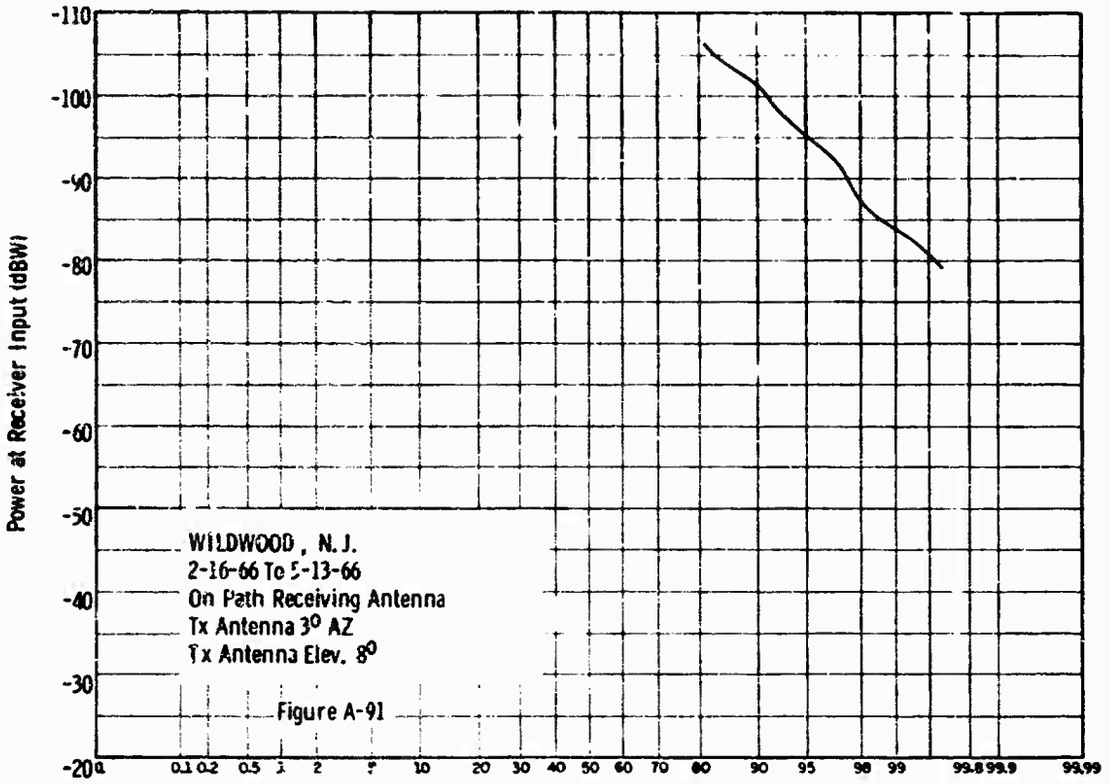



Figure A-91

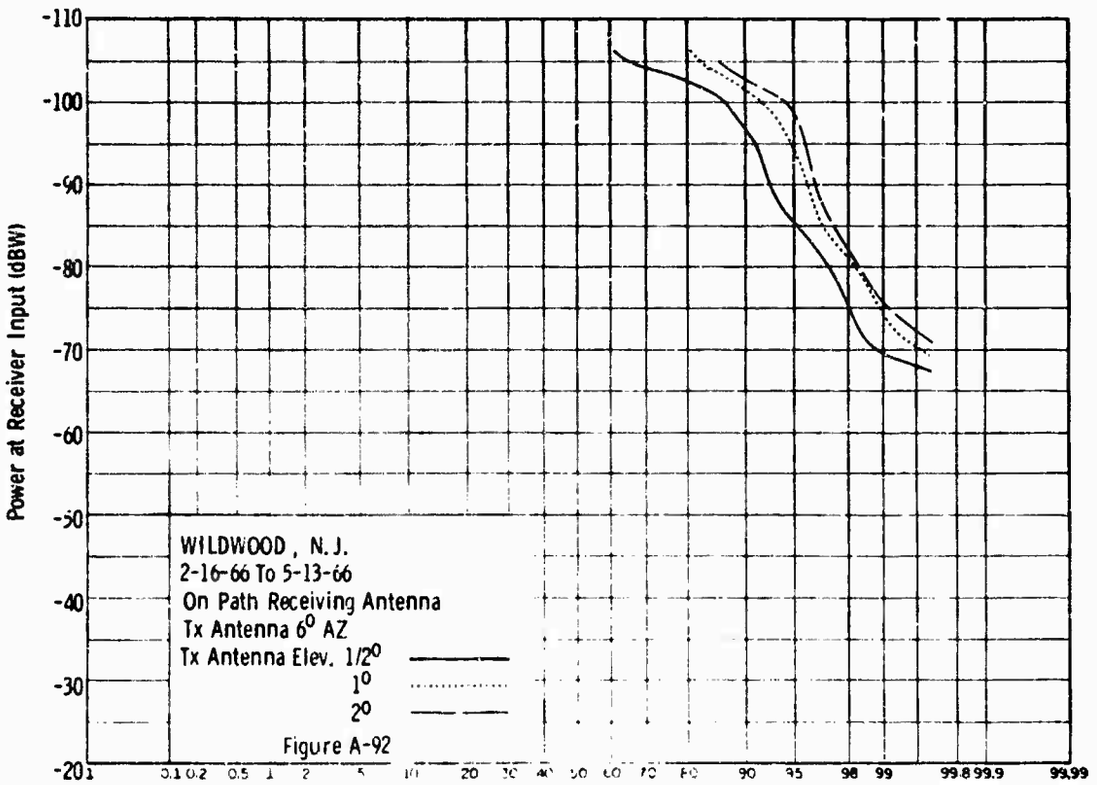



Figure A-92

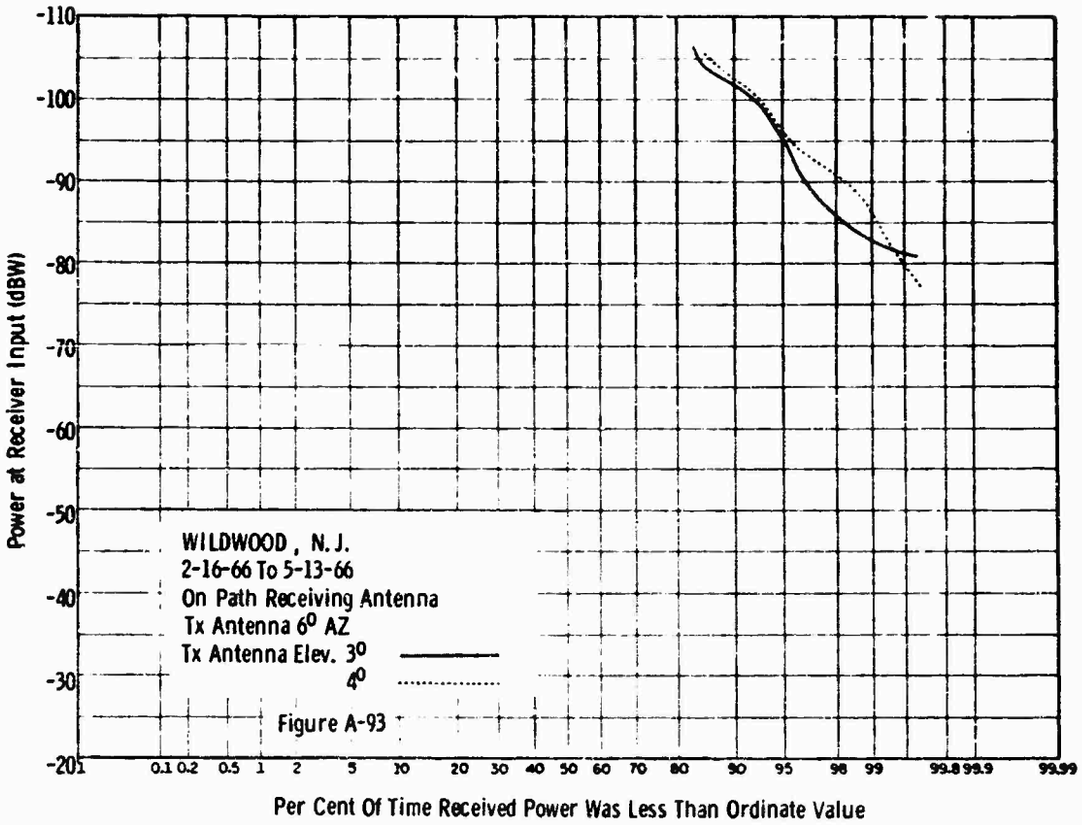



Figure A-93

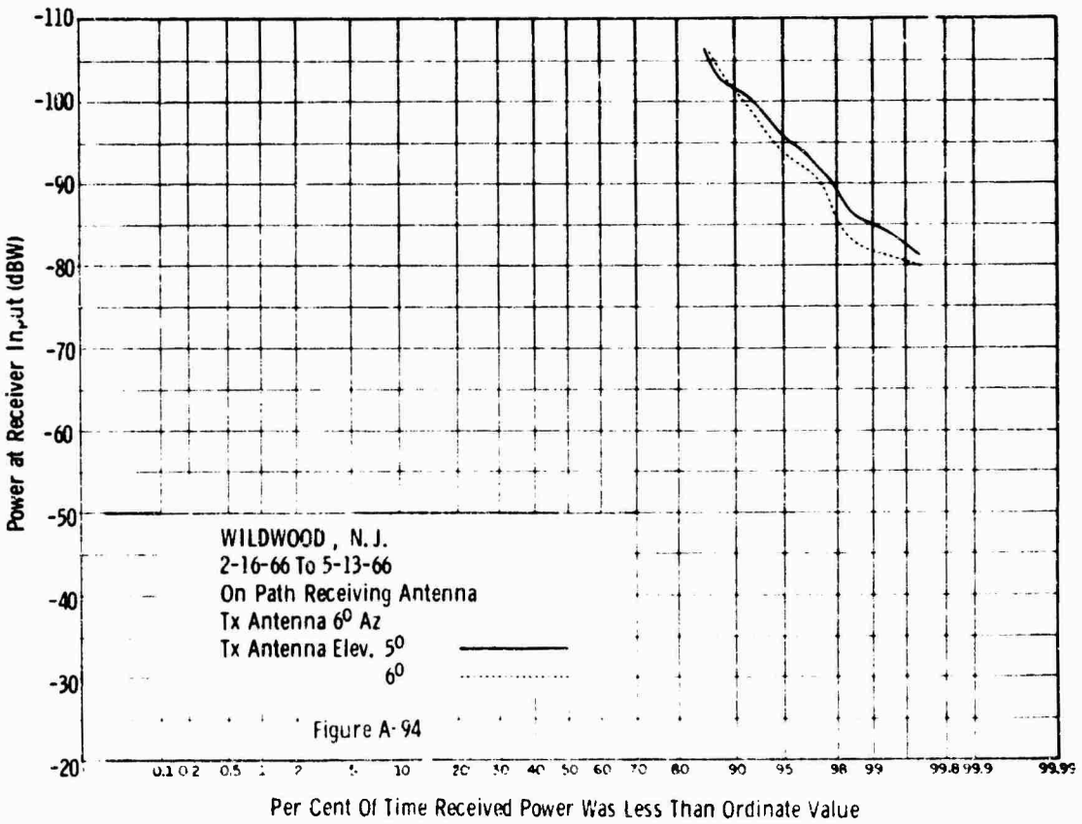



Figure A-94

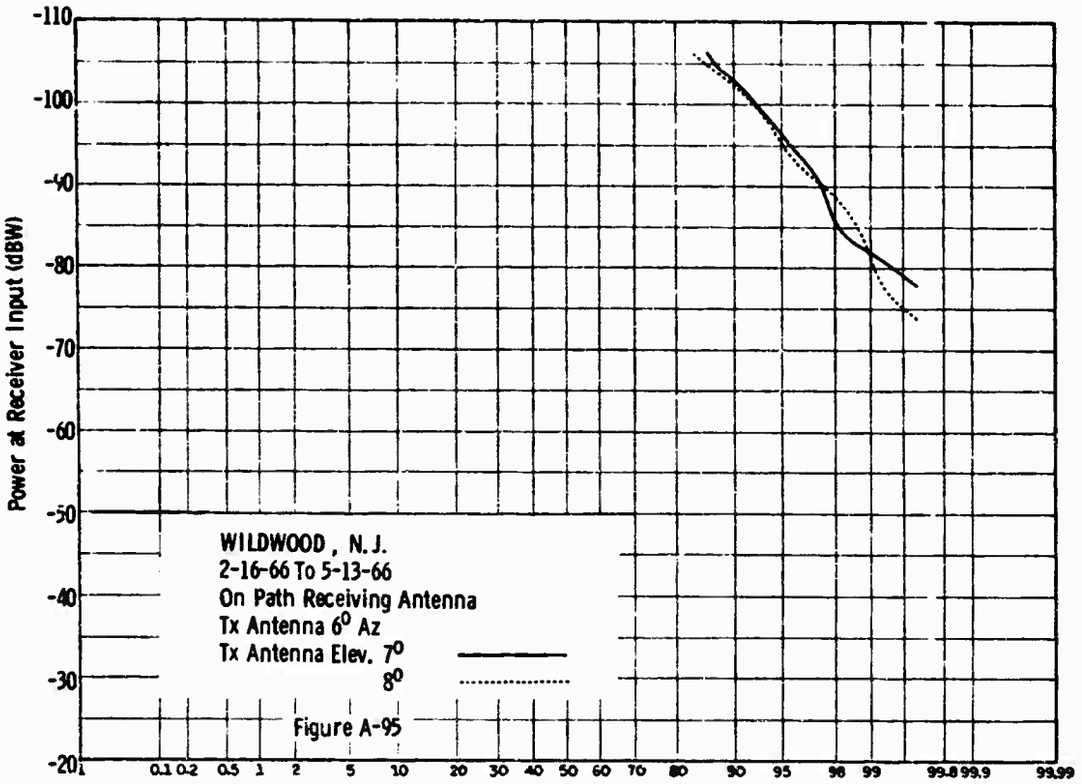



Figure A-95

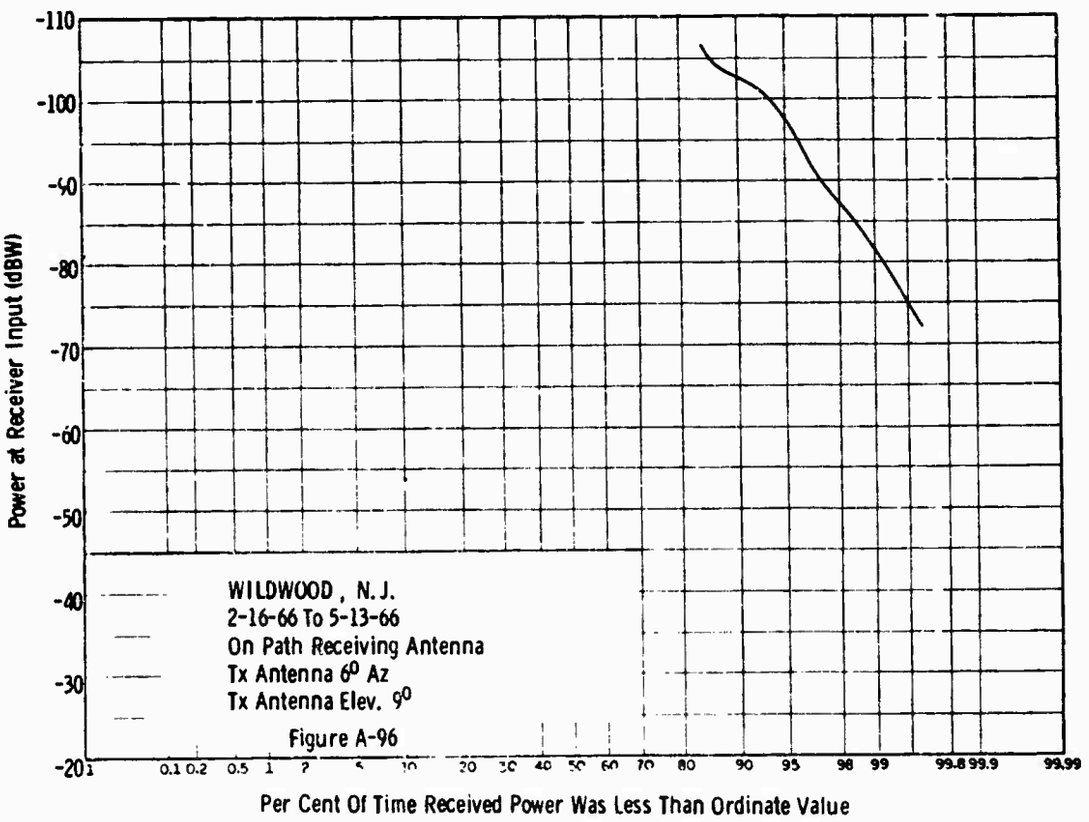



Figure A-96

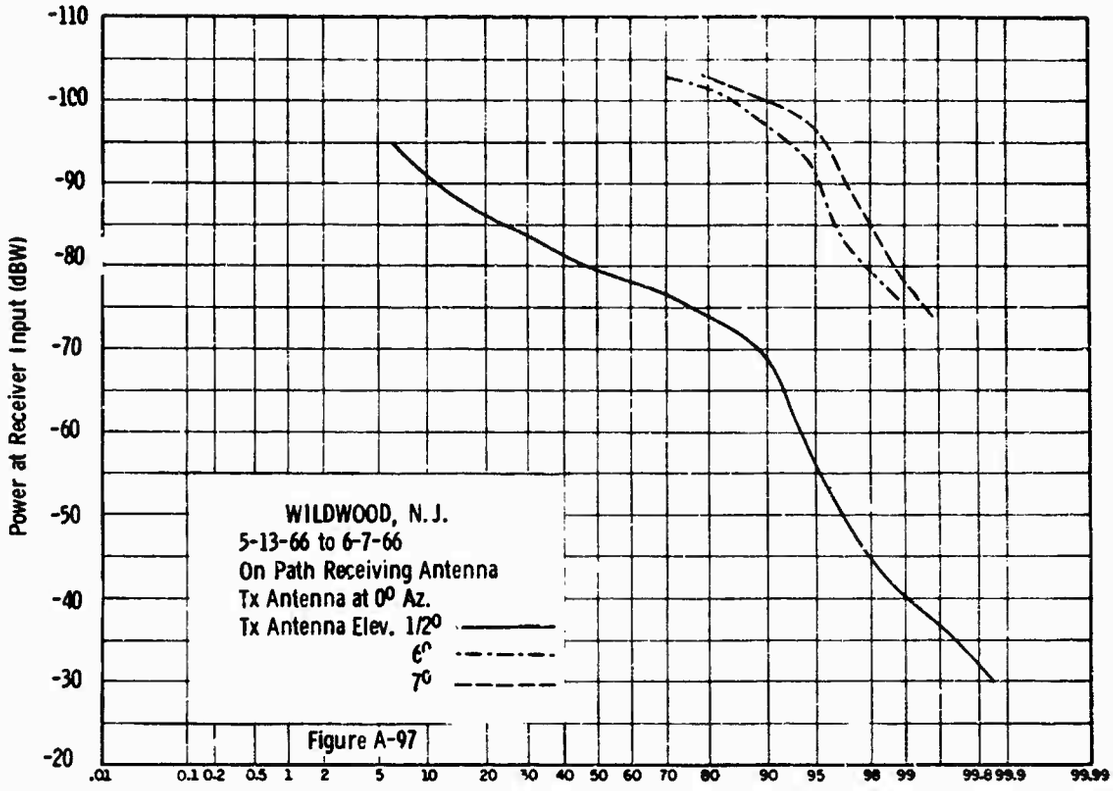



Figure A-97

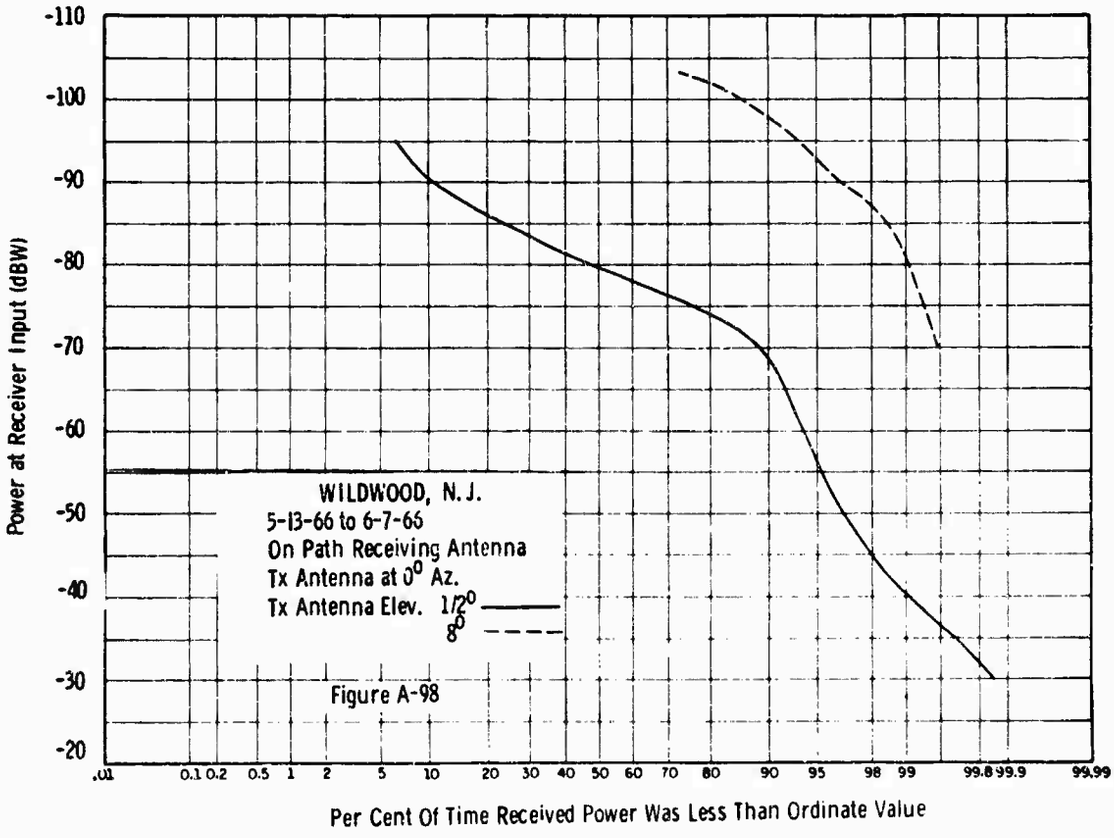
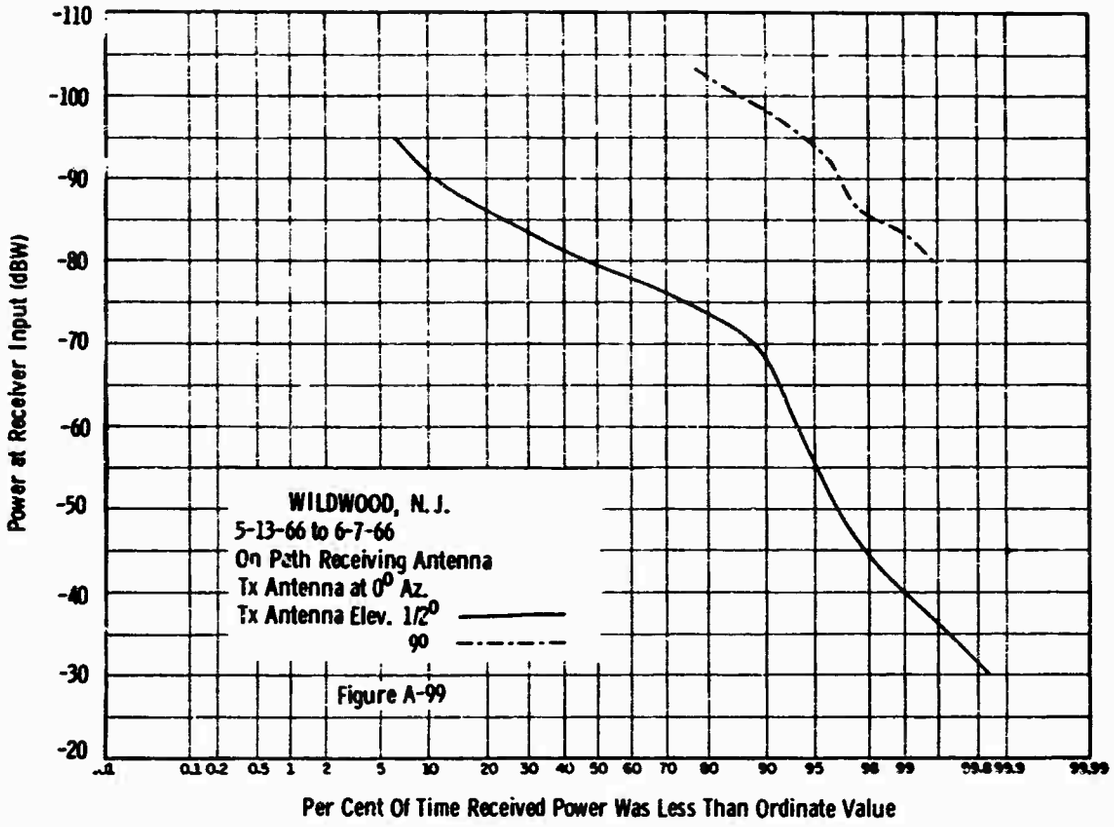
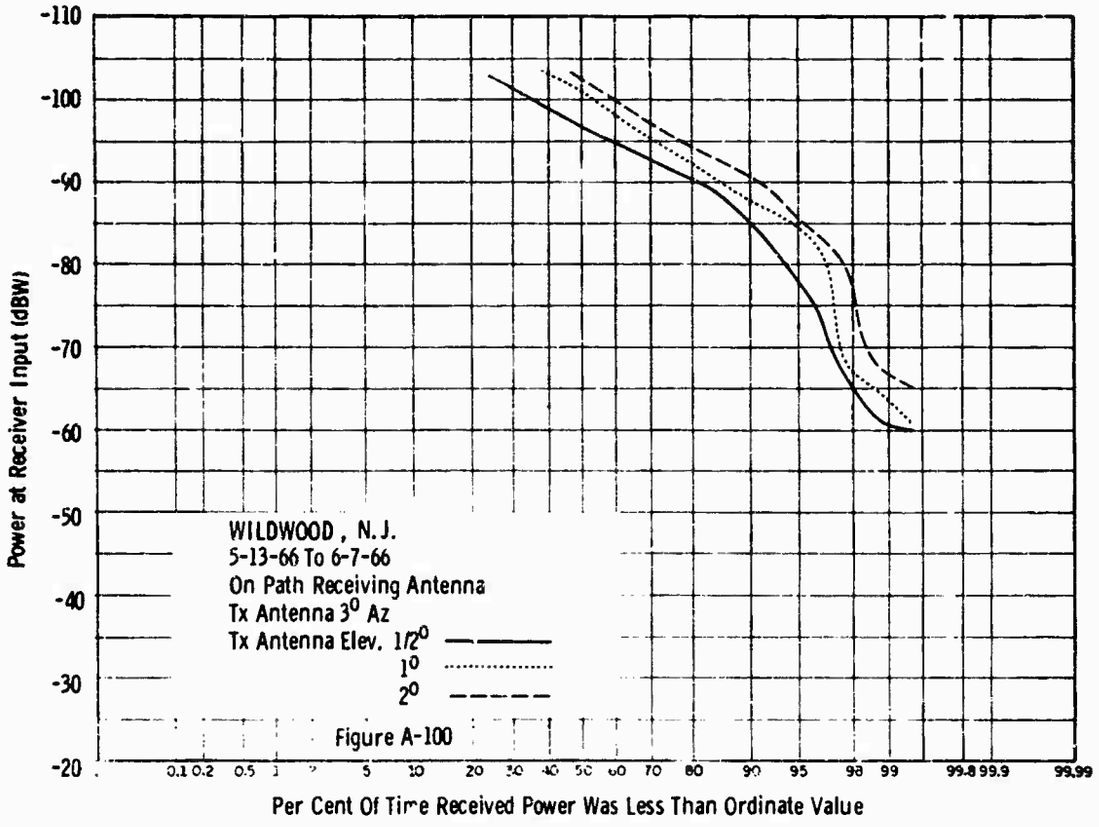



Figure A-98


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
5-13-66 to 6-7-66
On Path Receiving Antenna
Tx Antenna at 0° Az.
Tx Antenna Elev. 1/2°
90
Figure A-99
.1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
5-13-66 To 6-7-66
On Path Receiving Antenna
Tx Antenna 3° Az
Tx Antenna Elev. 1/2°
1°
2°
Figure A-100
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

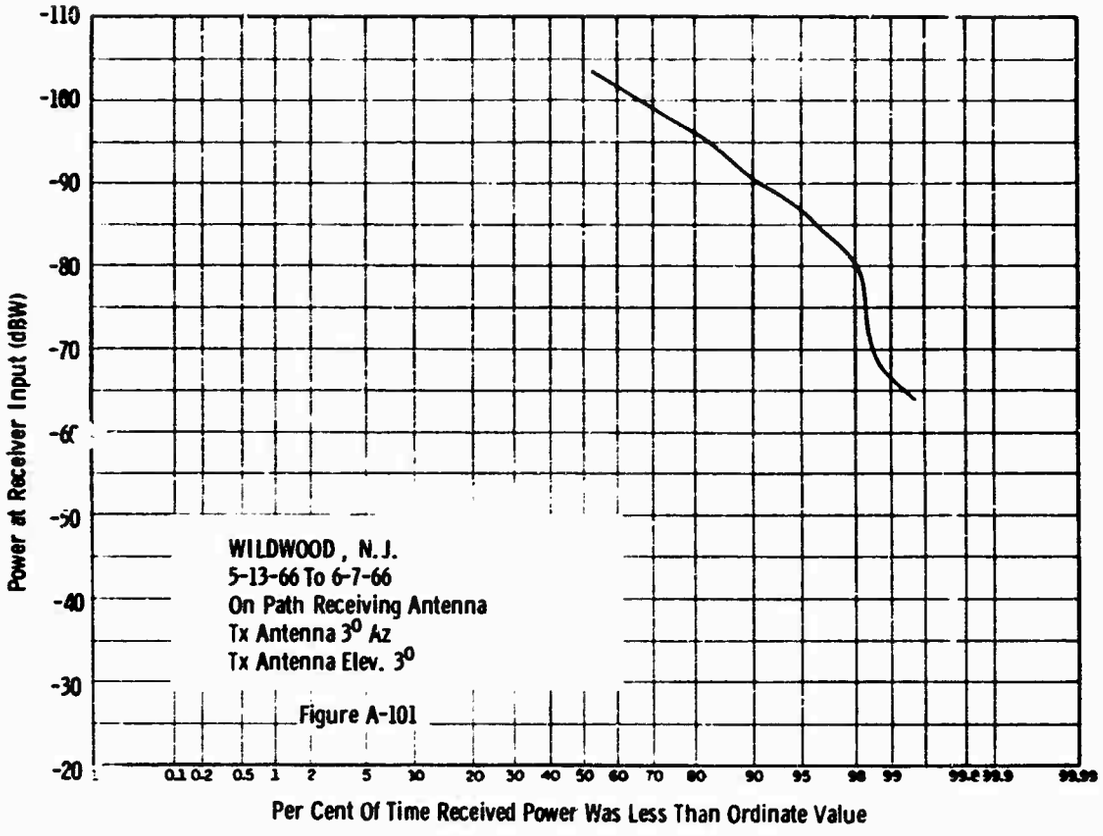



Figure A-101

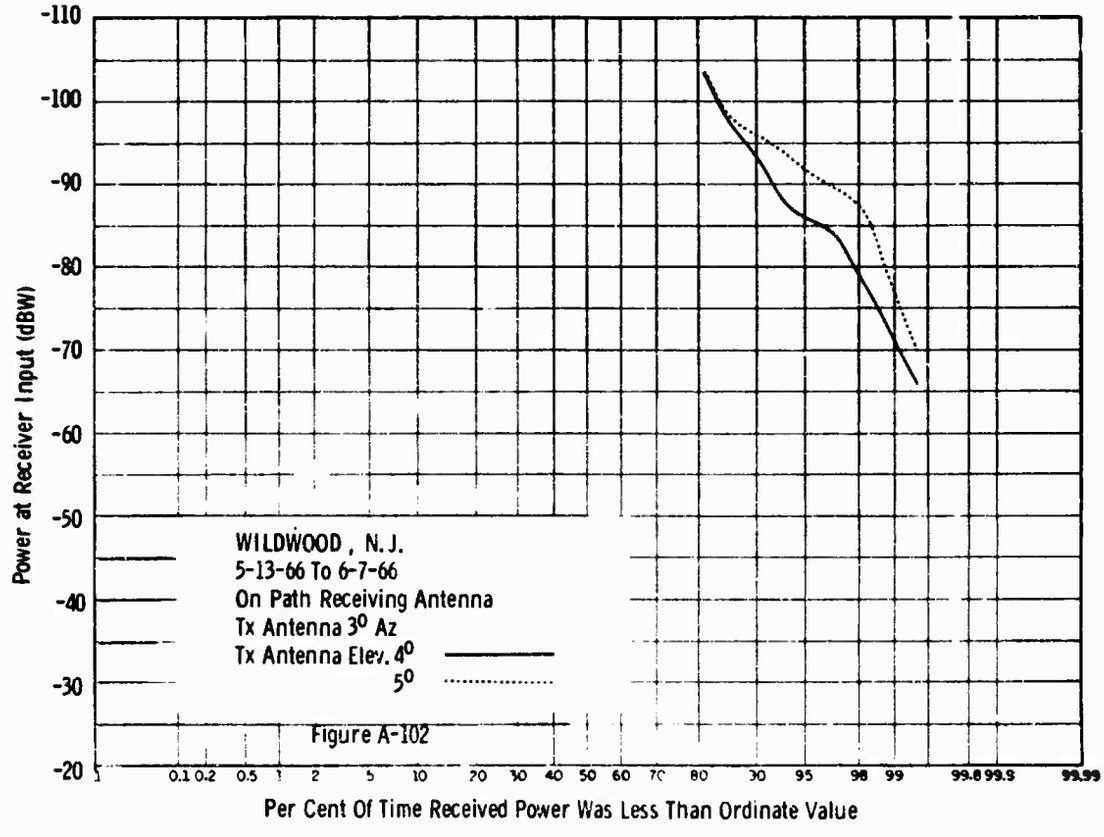



Figure A-102

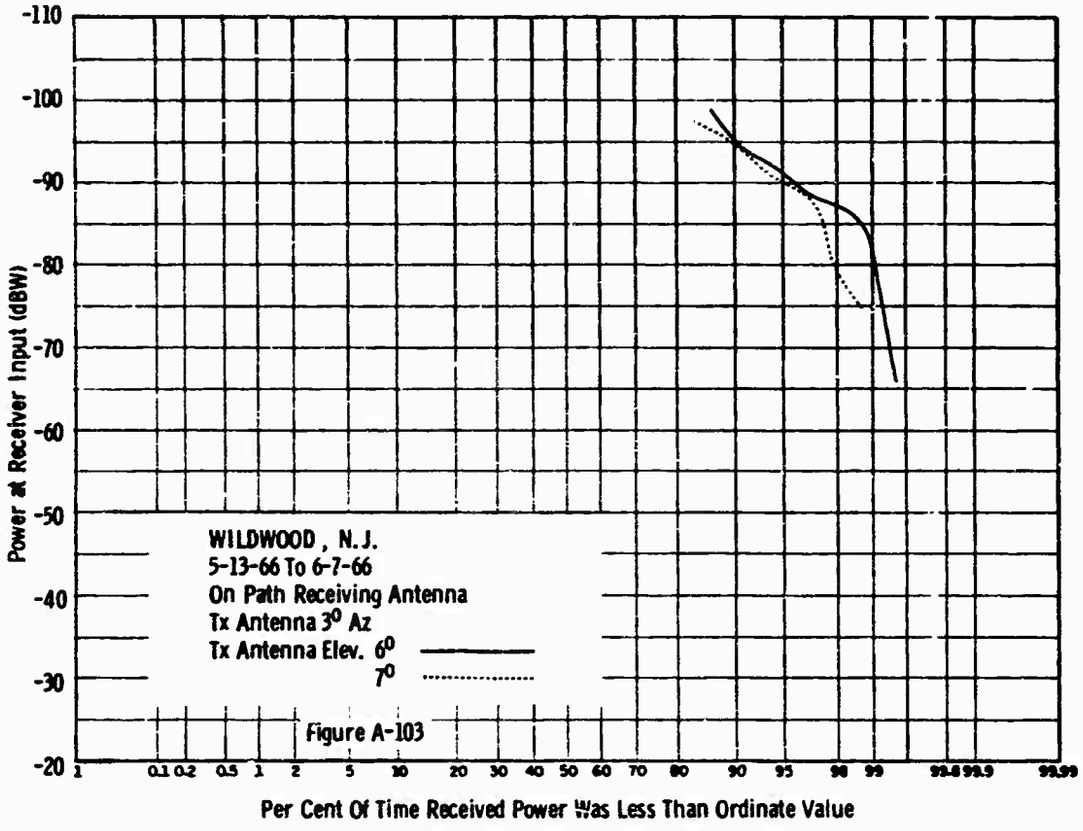



Figure A-103

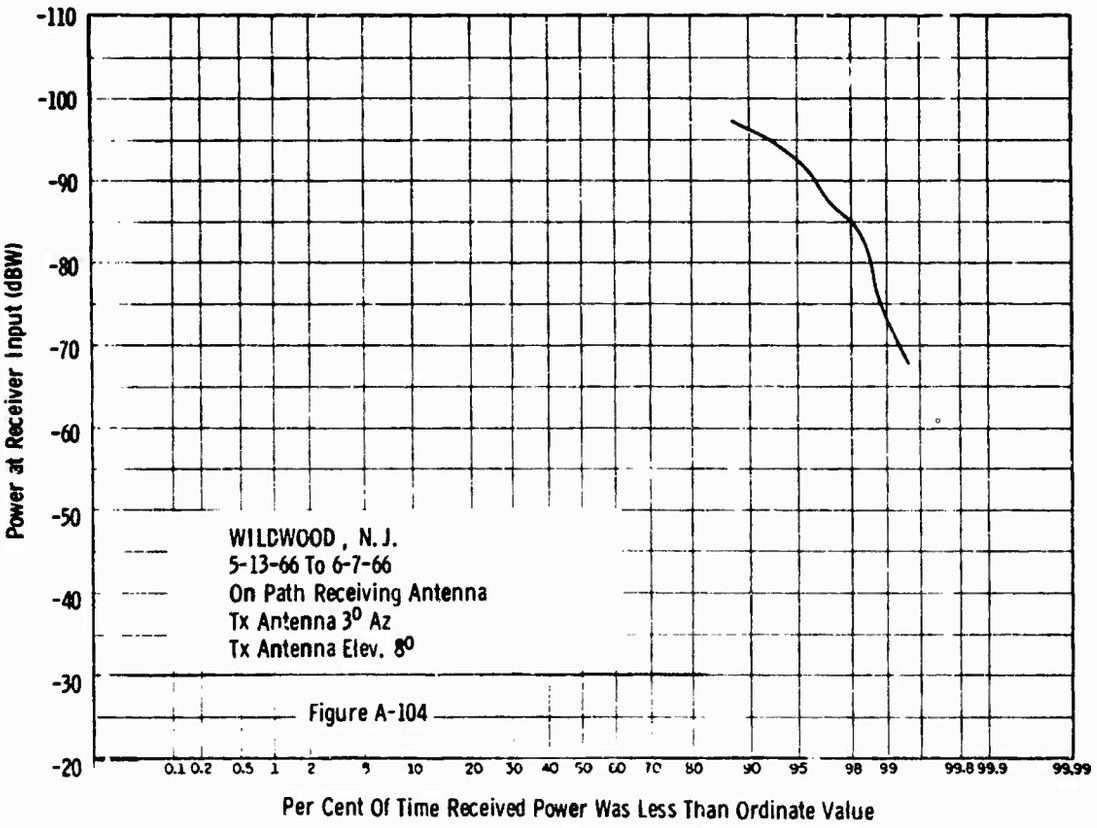



Figure A-104

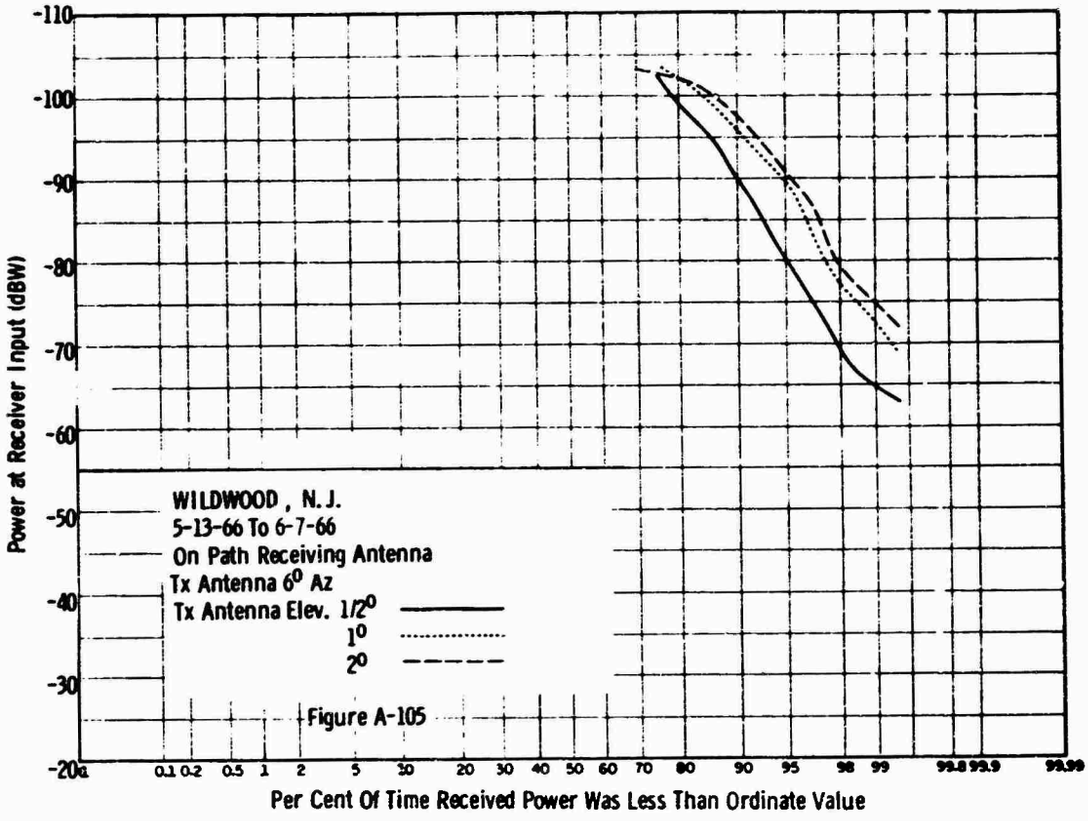



Figure A-105

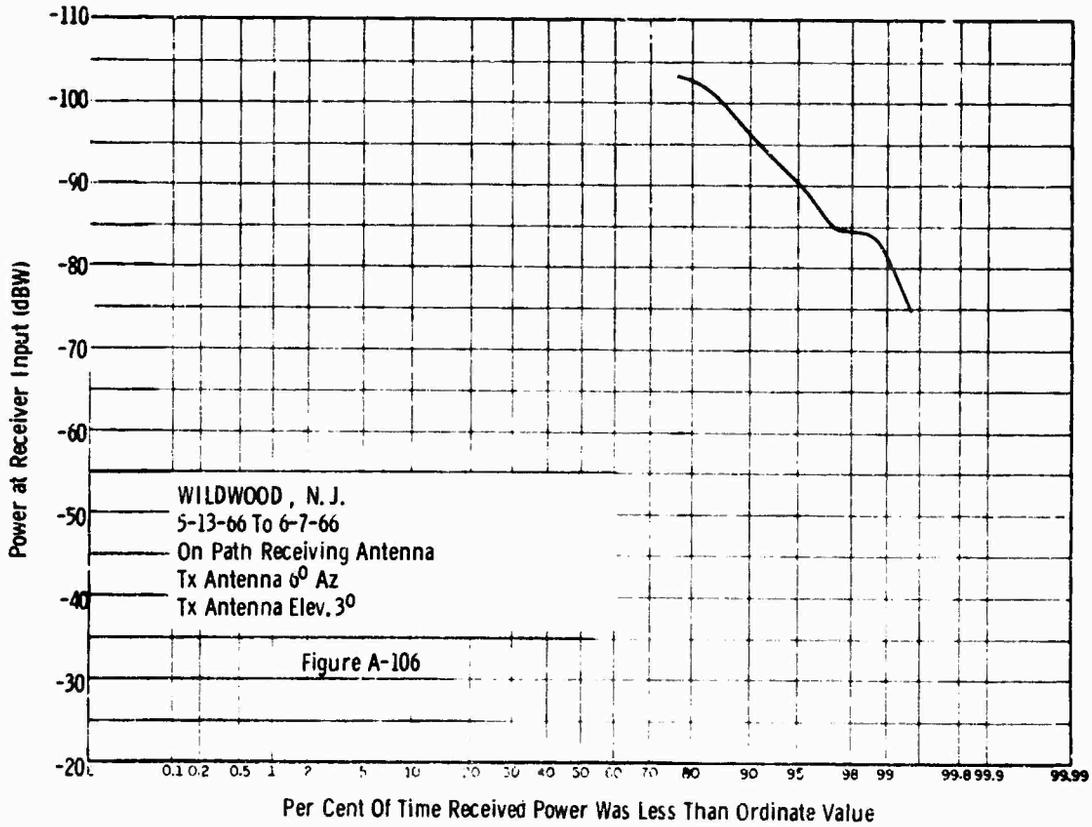



Figure A-106

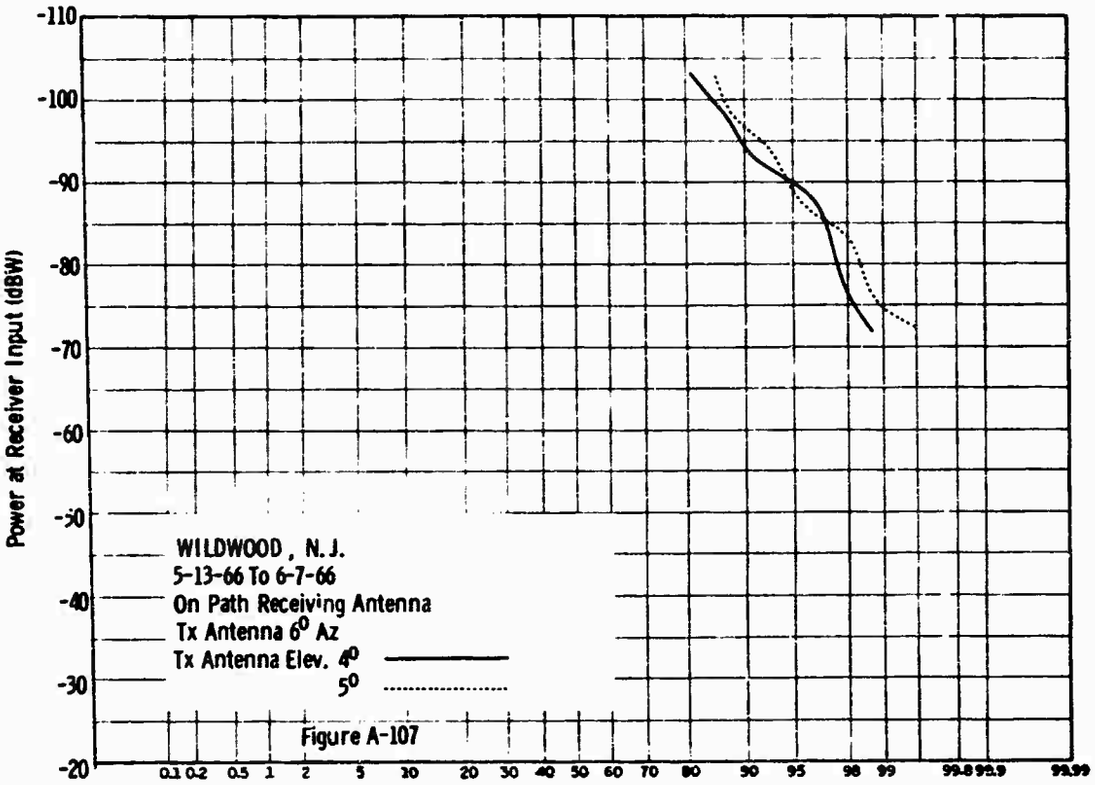



Figure A-107

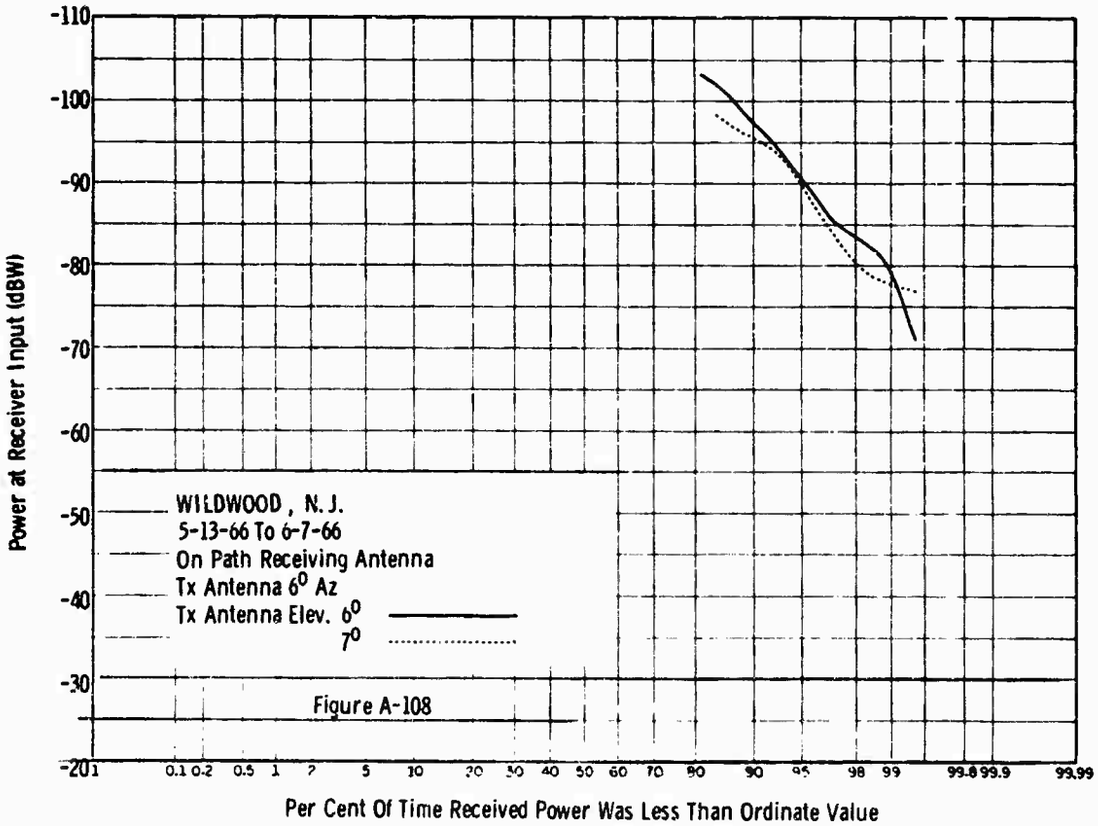
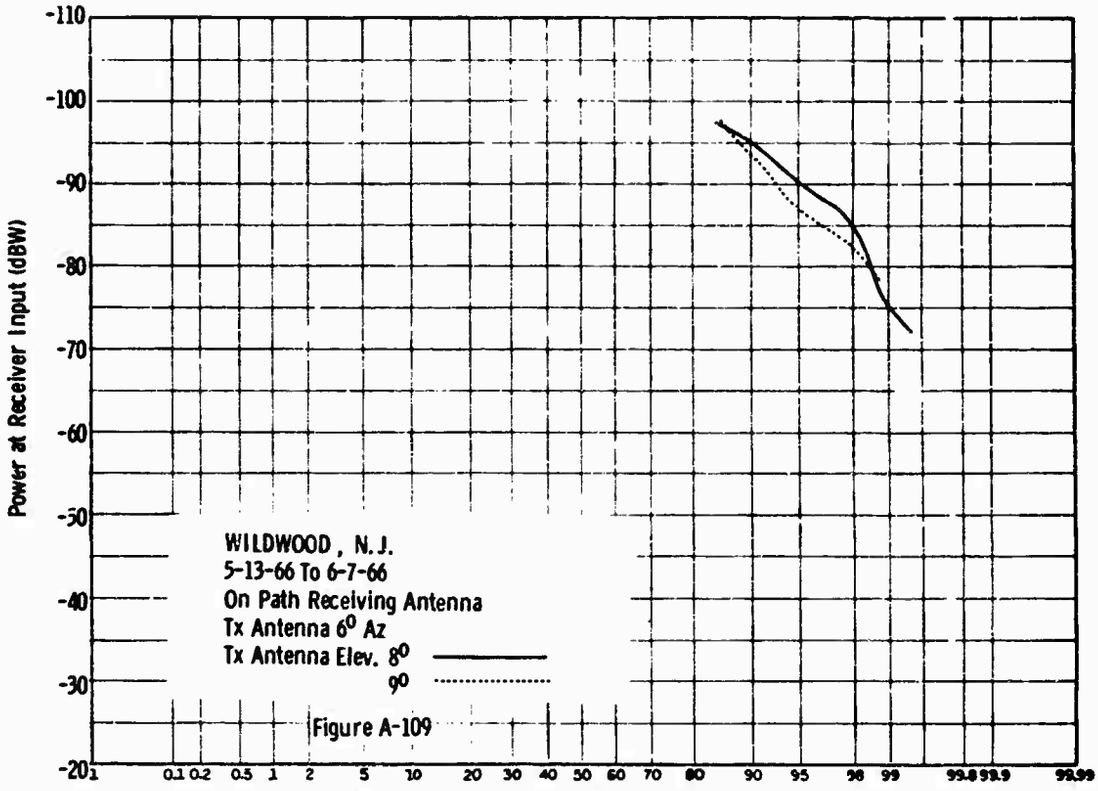
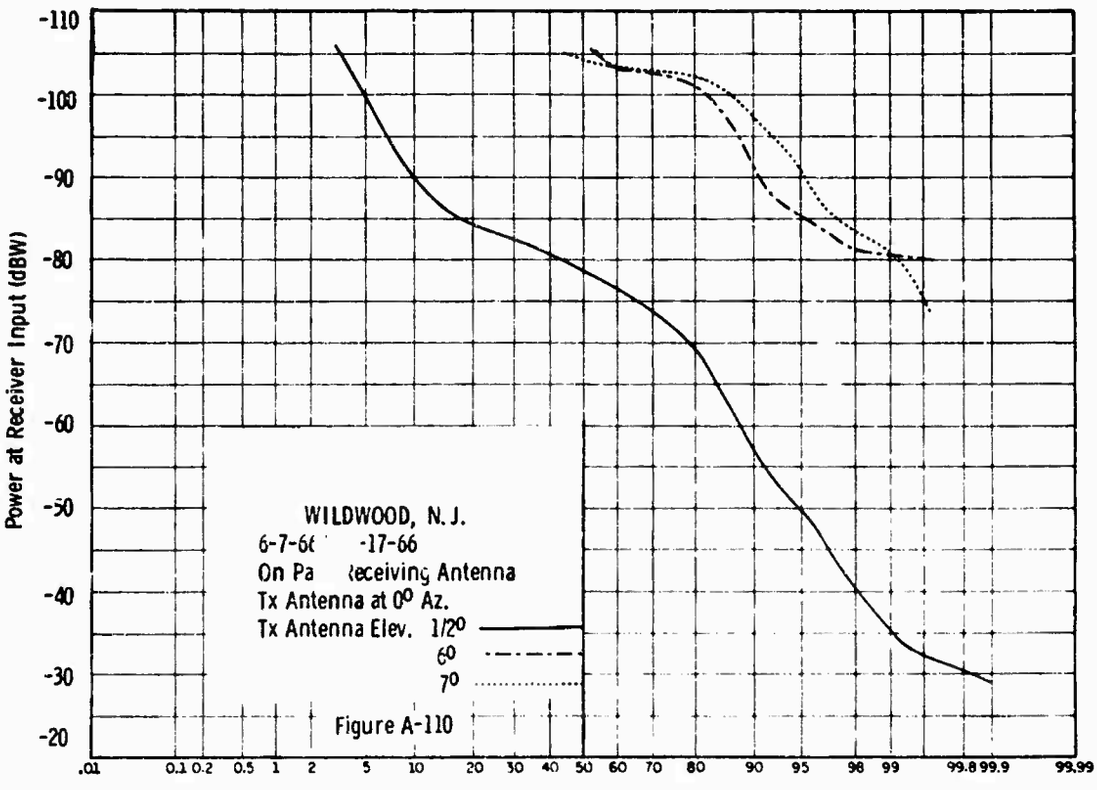



Figure A-108


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N.J.
5-13-66 To 6-7-66
On Path Receiving Antenna
Tx Antenna 6° Az
Tx Antenna Elev. 8°
9°
Figure A-109
.1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
6-7-66 -17-66
On Pa Receiving Antenna
Tx Antenna at 0° Az.
Tx Antenna Elev. 1/2°
6°
7°
Figure A-110
.01 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

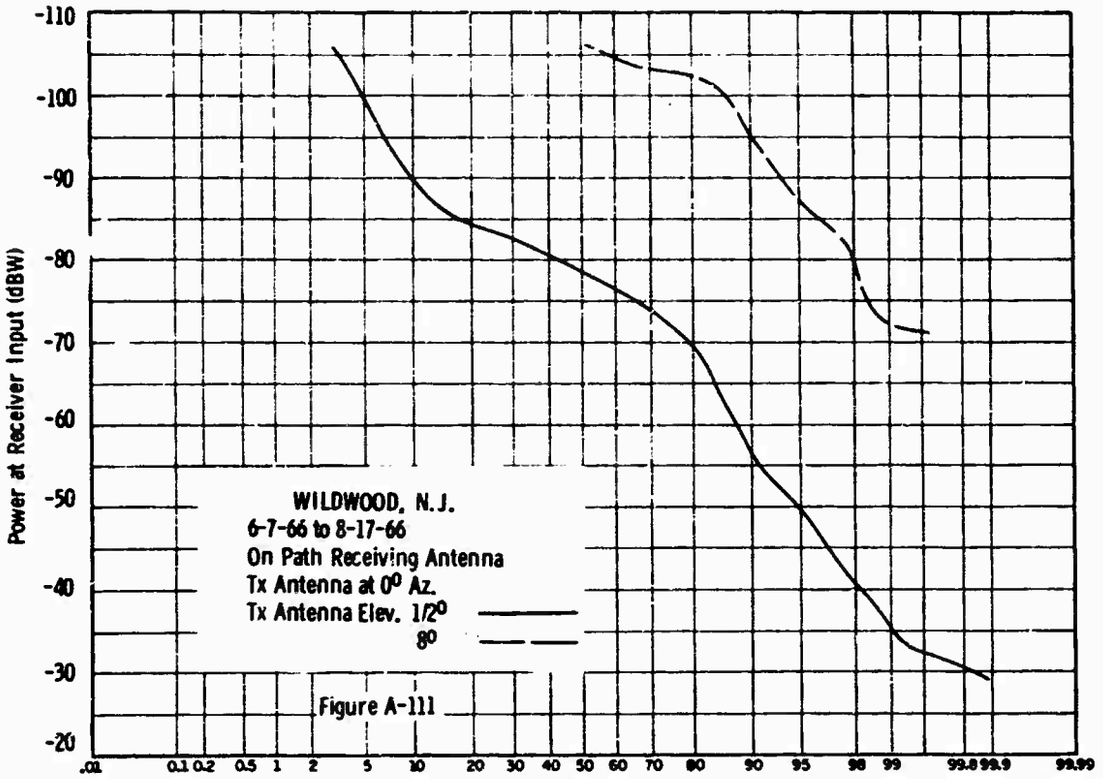



Figure A-111

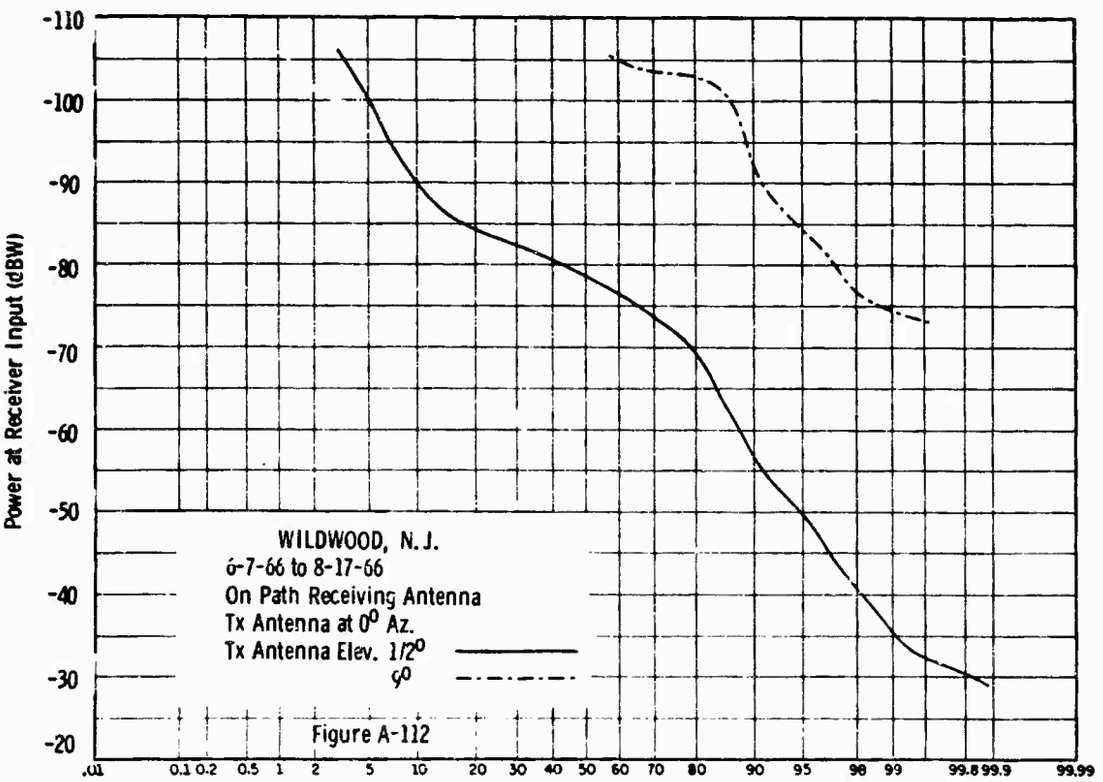



Figure A-112

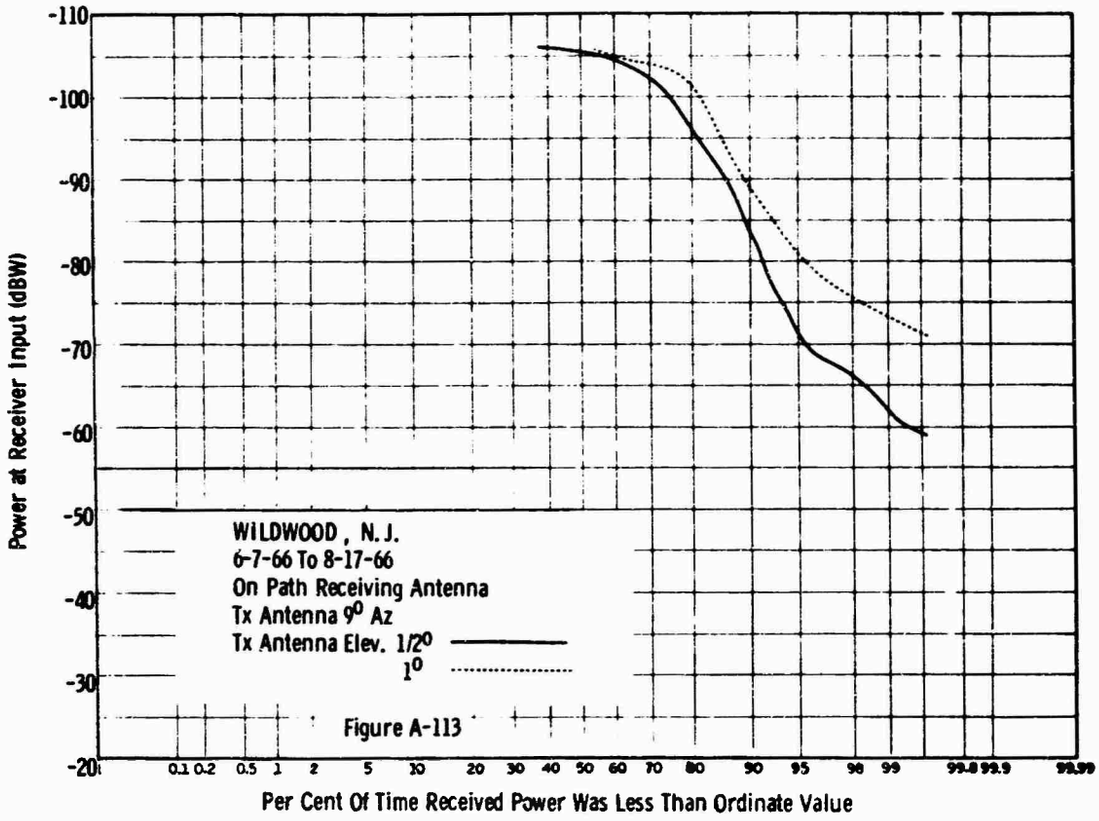



Figure A-113

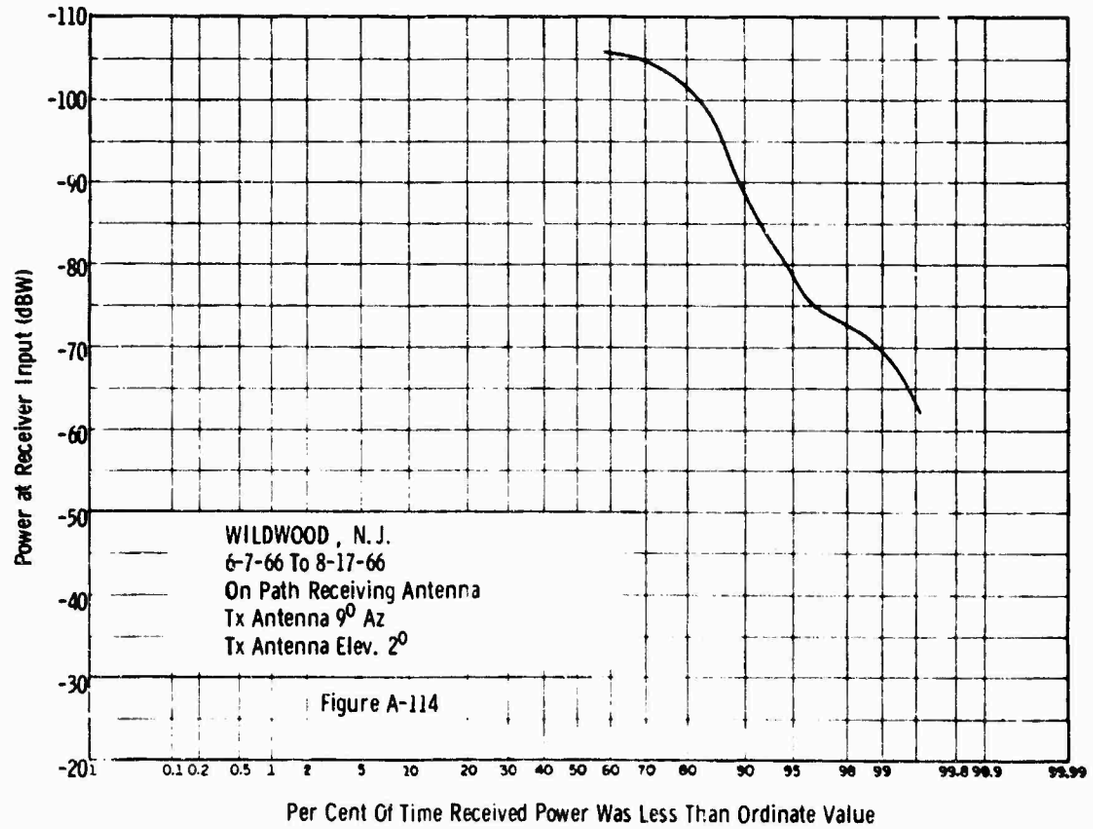
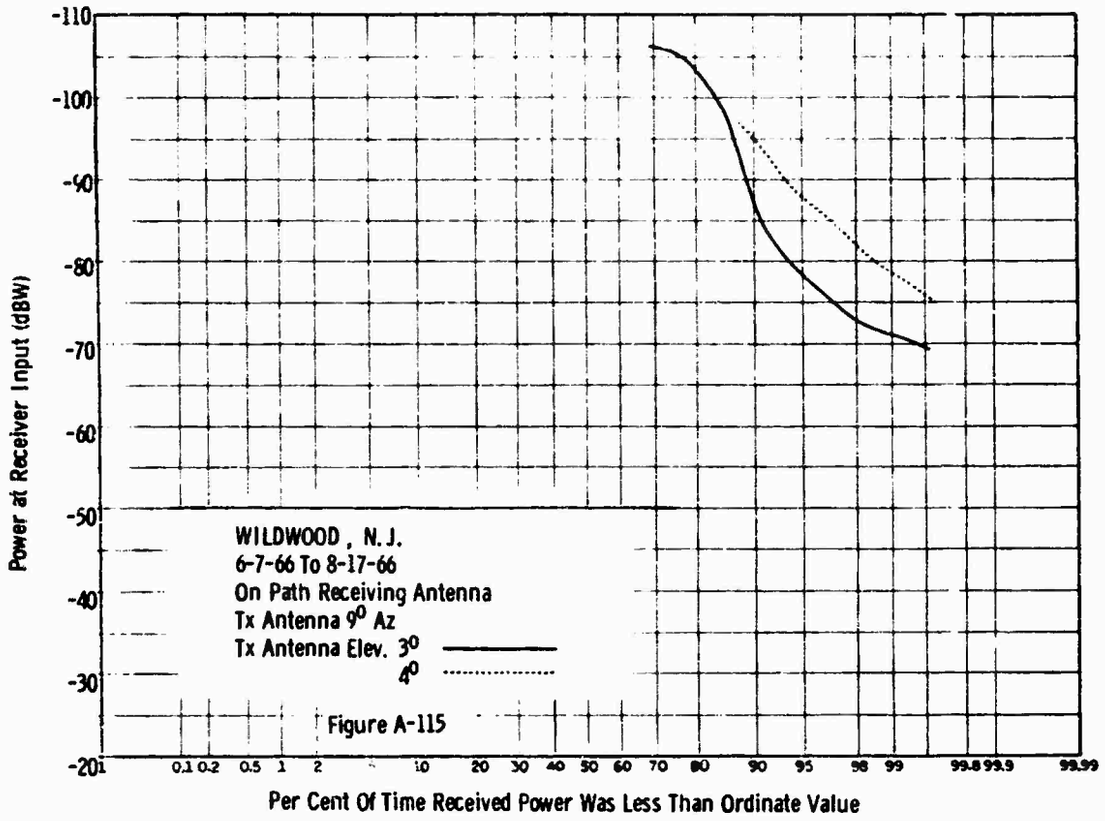
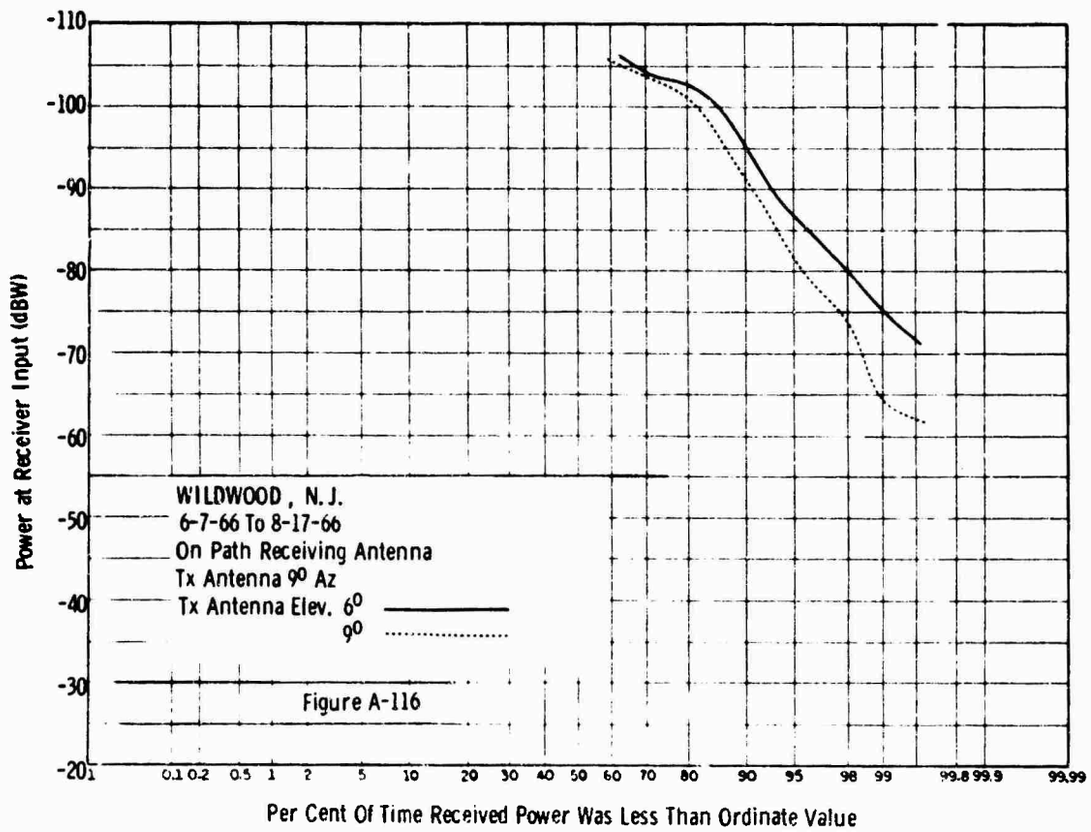
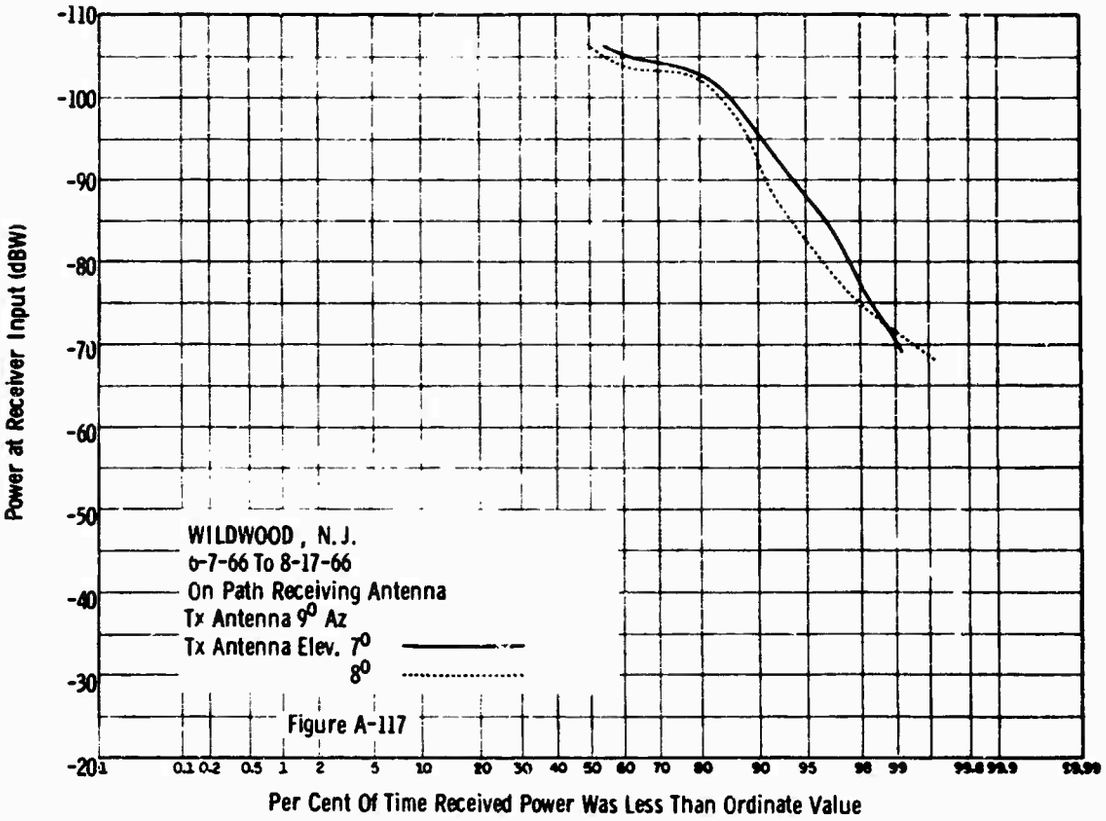
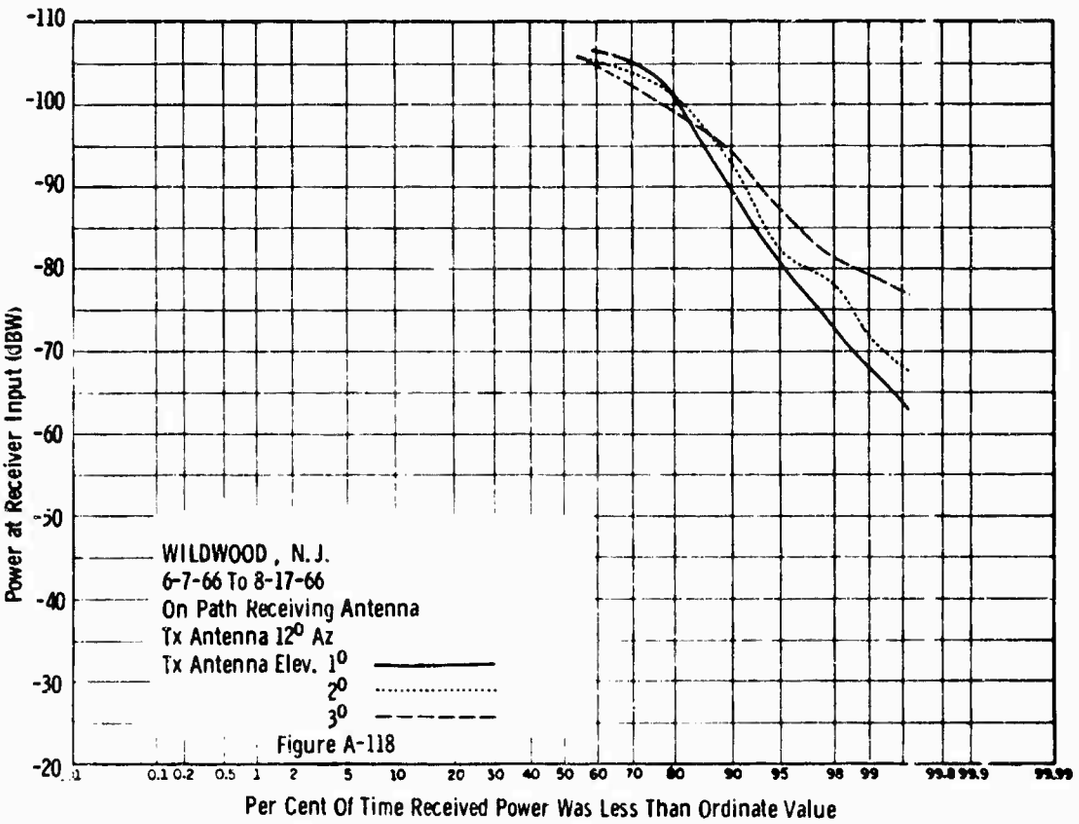


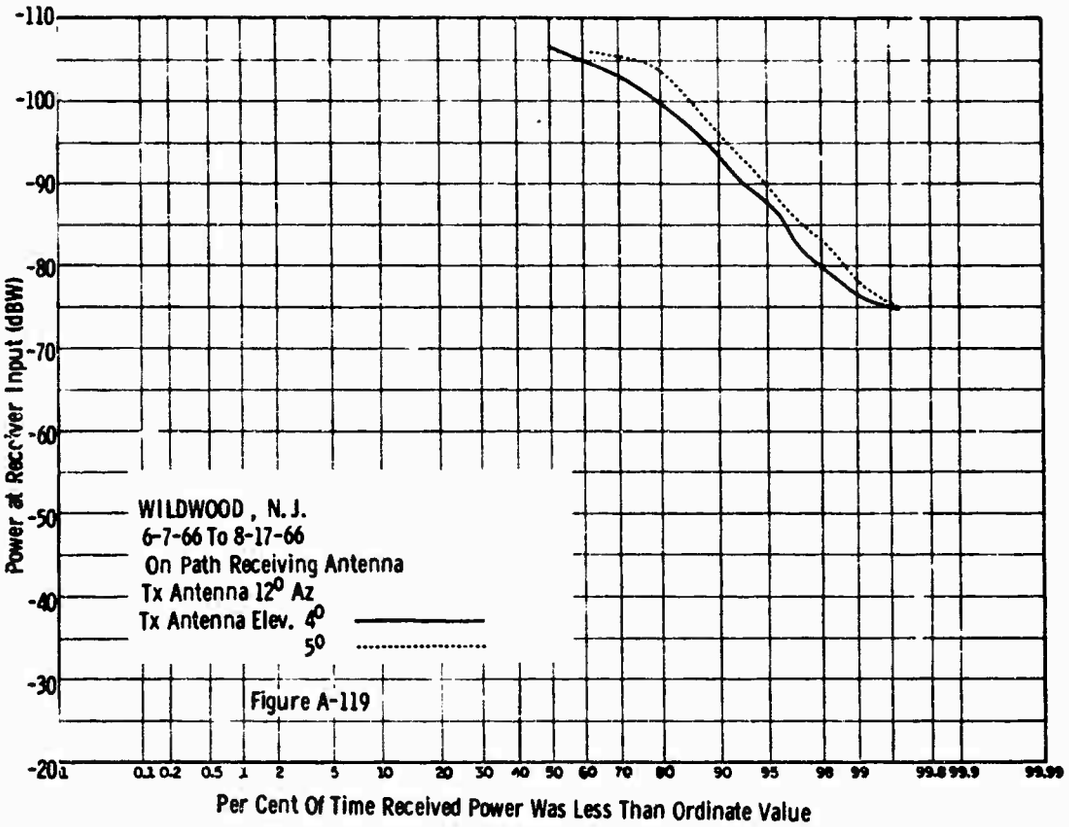

Figure A-114

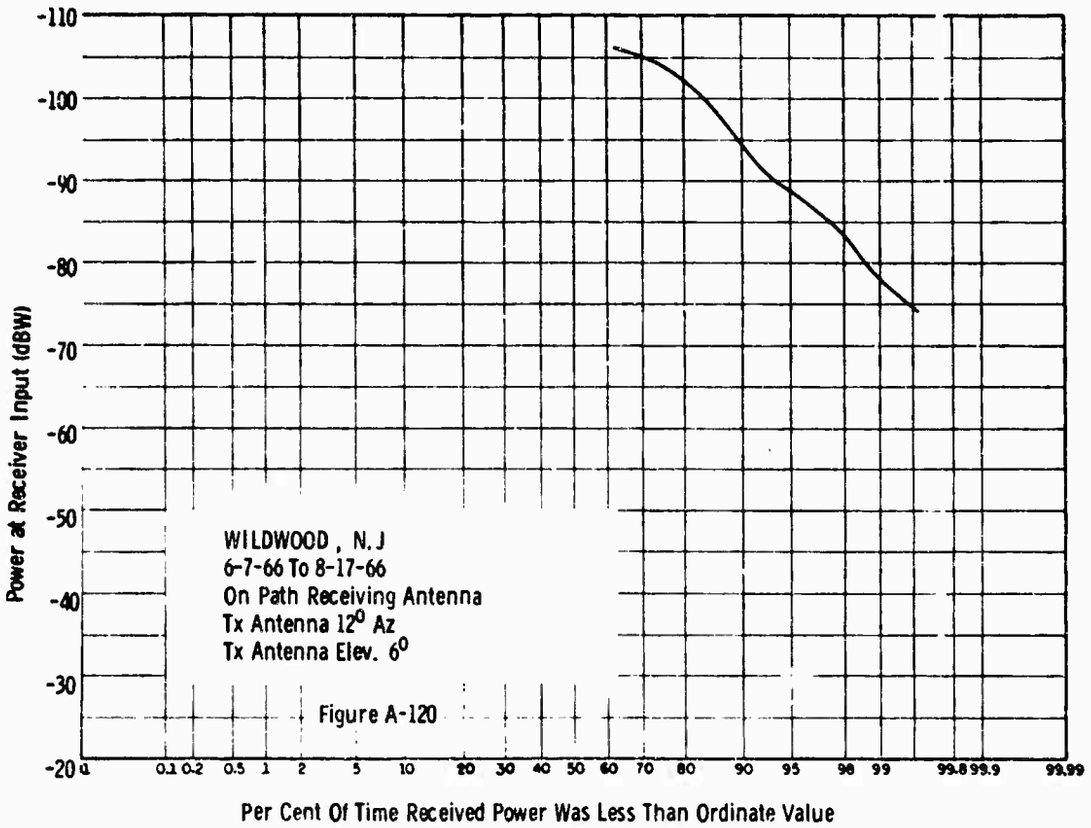

-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J.
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 9° Az
Tx Antenna Elev. 3°
4°
Figure A-115
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J.
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 9° Az
Tx Antenna Elev. 6°
9°
Figure A-116
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J.
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 9° Az
Tx Antenna Elev. 7°
8°
Figure A-117
.1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J.
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 12° Az
Tx Antenna Elev. 1°
2°
3°
Figure A-118
.1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J.
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 12° Az
Tx Antenna Elev. 4°
5°
Figure A-119
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N. J
6-7-66 To 8-17-66
On Path Receiving Antenna
Tx Antenna 12° Az
Tx Antenna Elev. 6°
Figure A-120
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

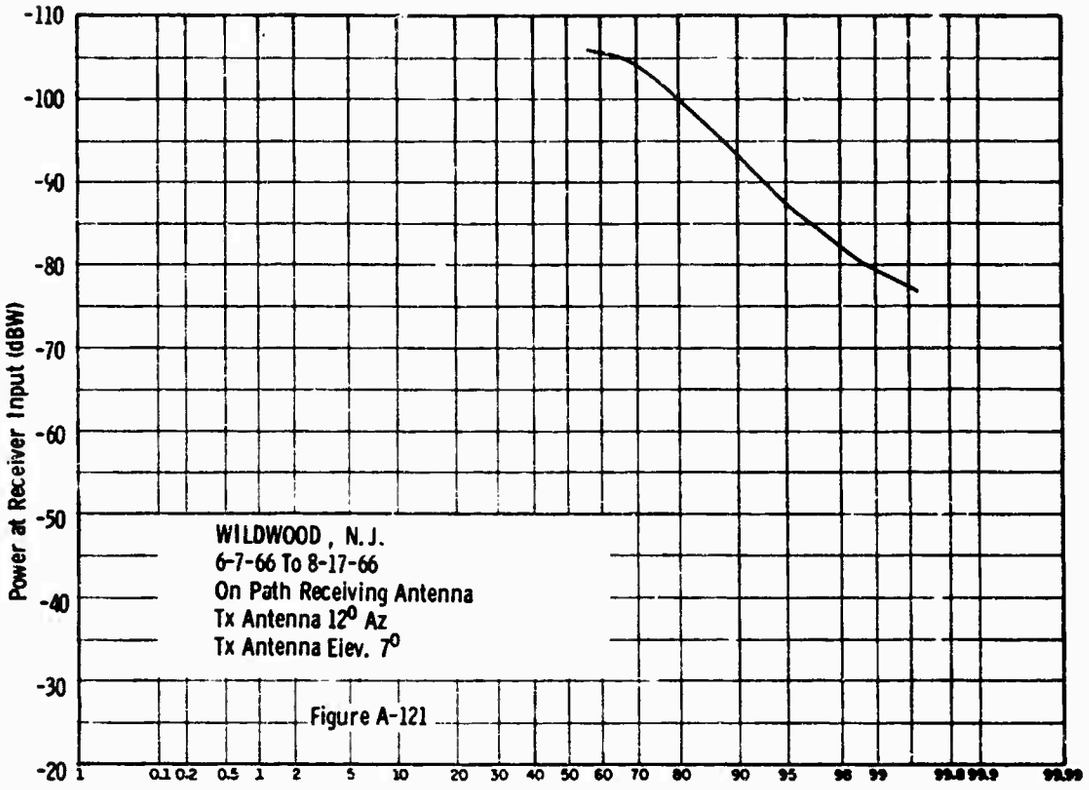



Figure A-121

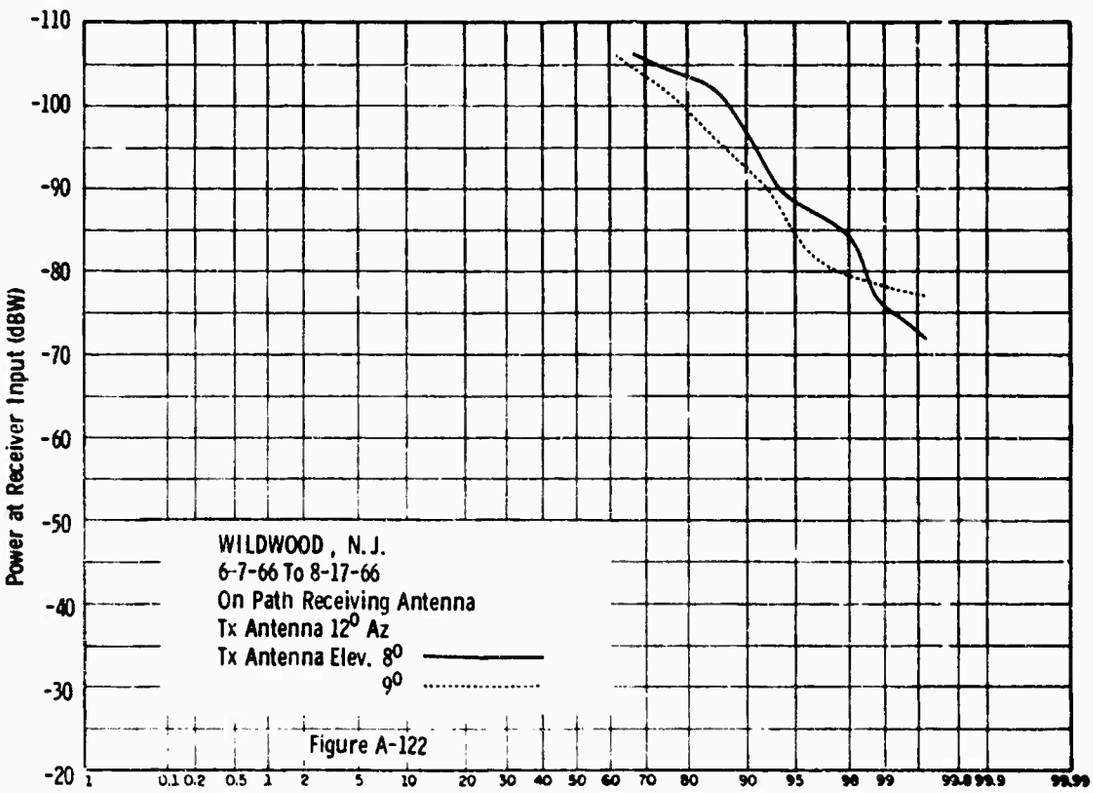



Figure A-122

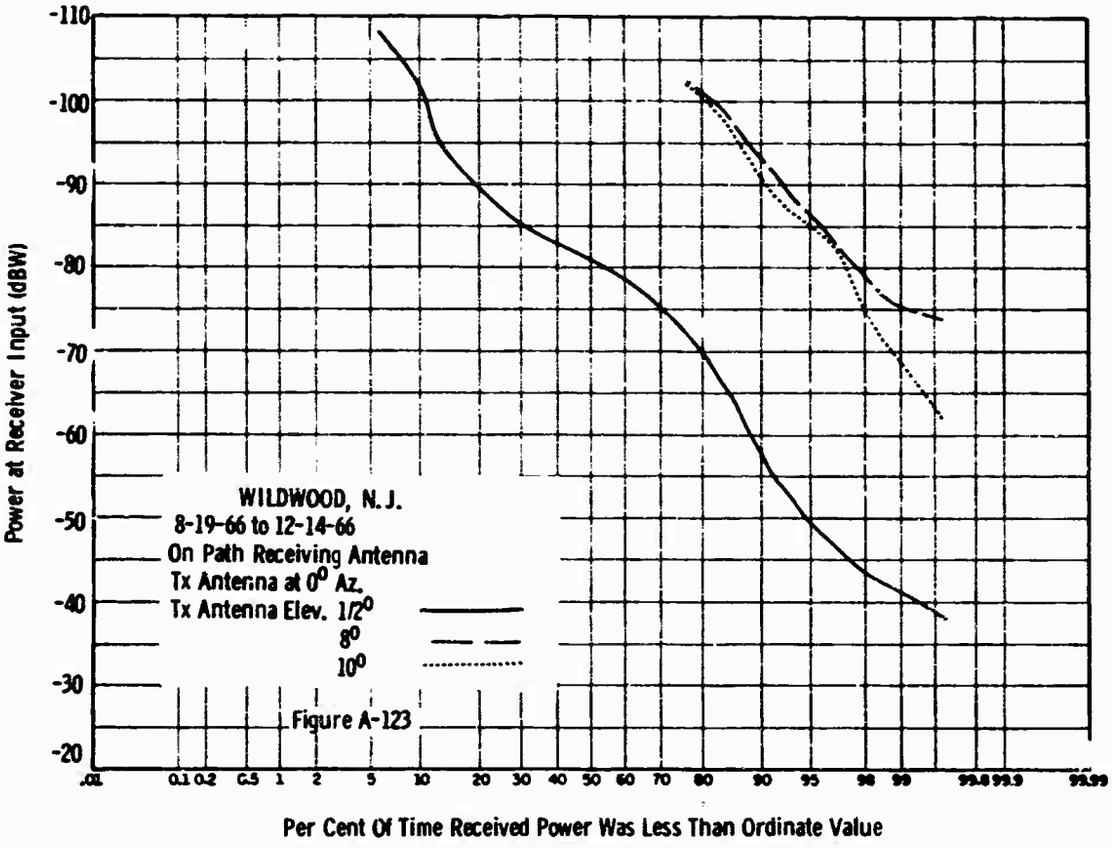



Figure A-123

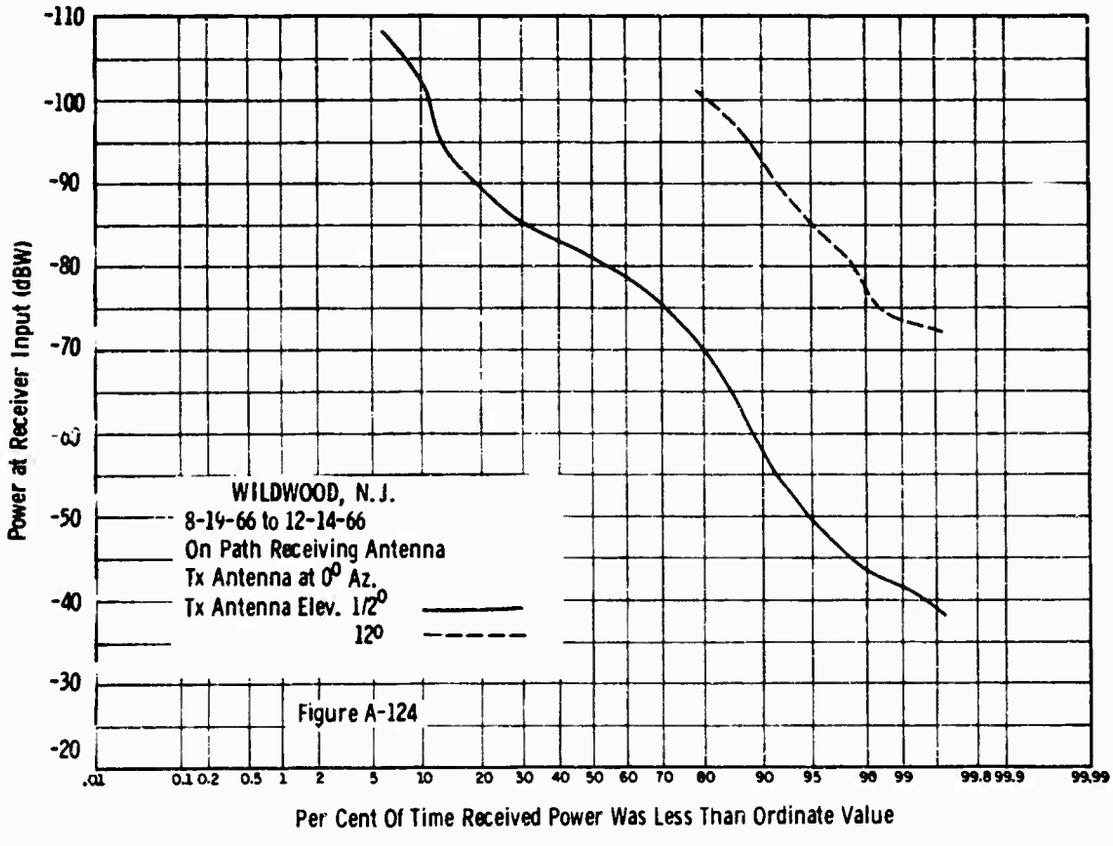



Figure A-124

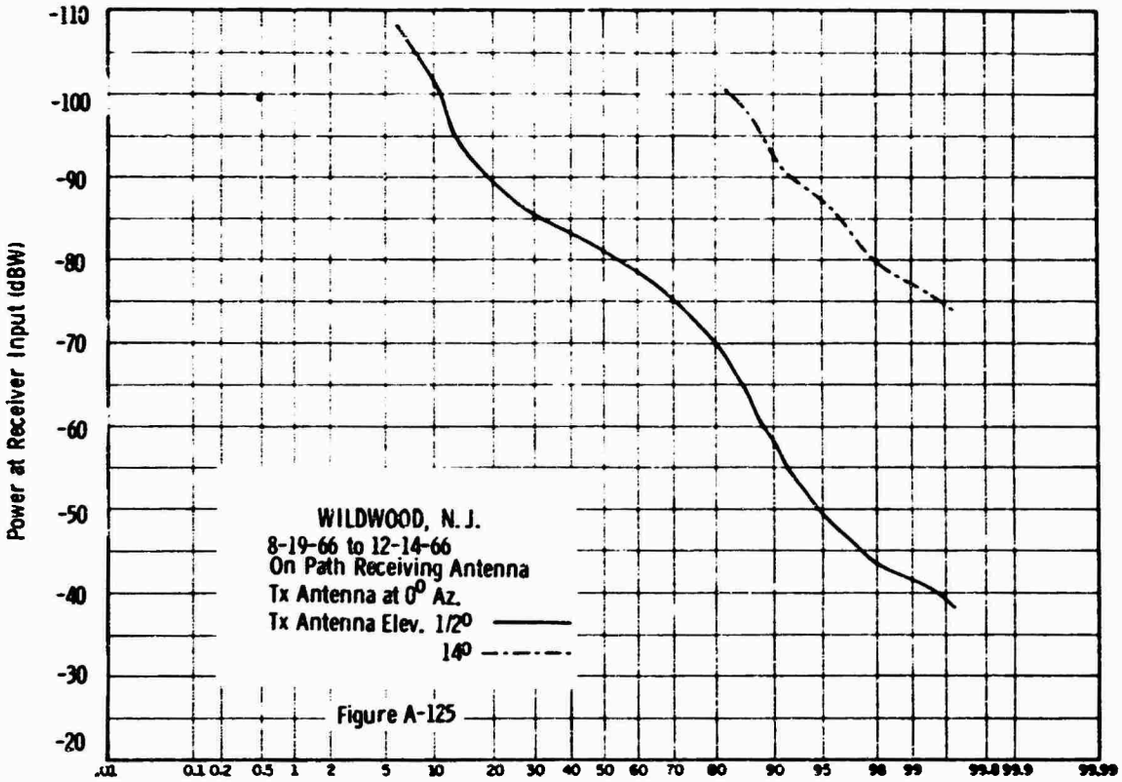



Figure A-125

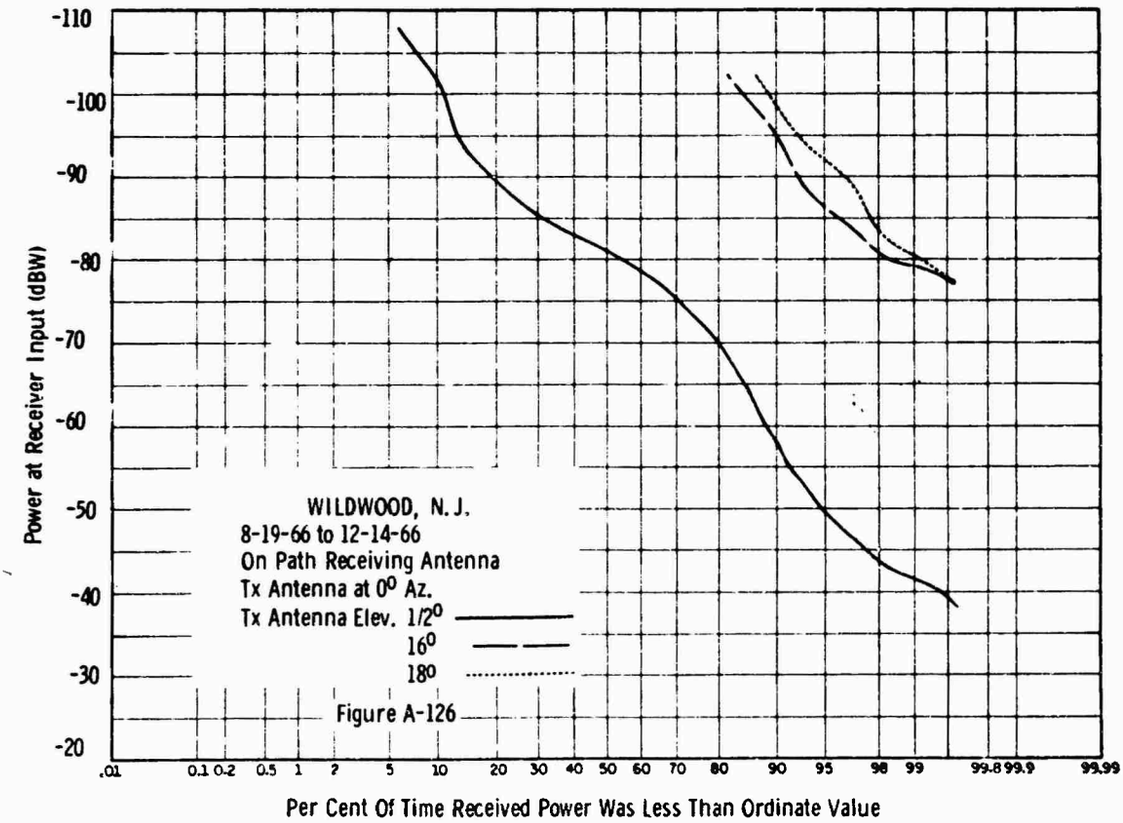



Figure A-126

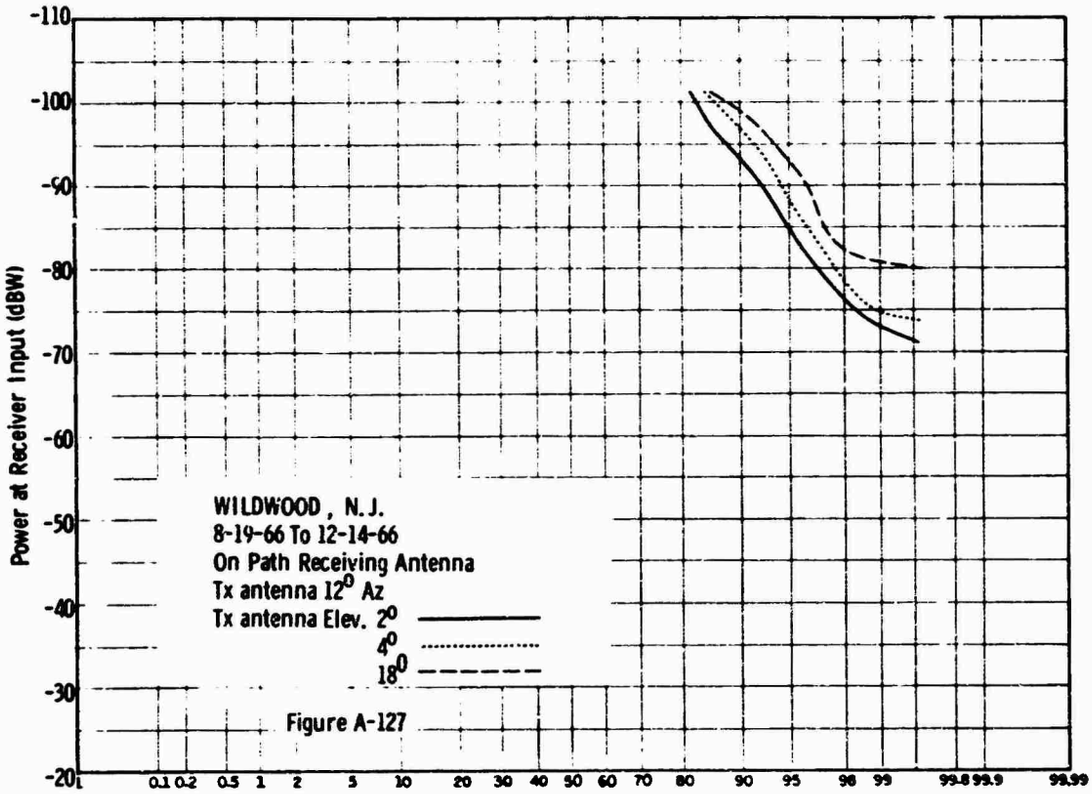



Figure A-127

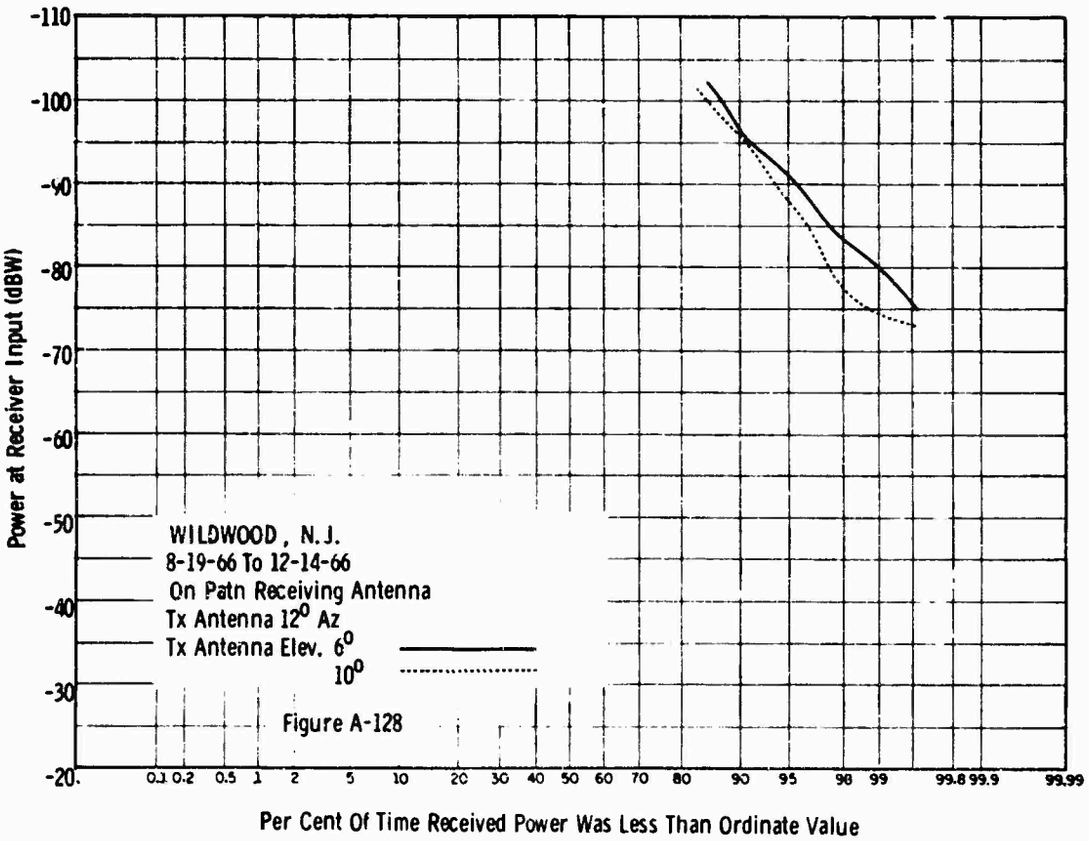



Figure A-128

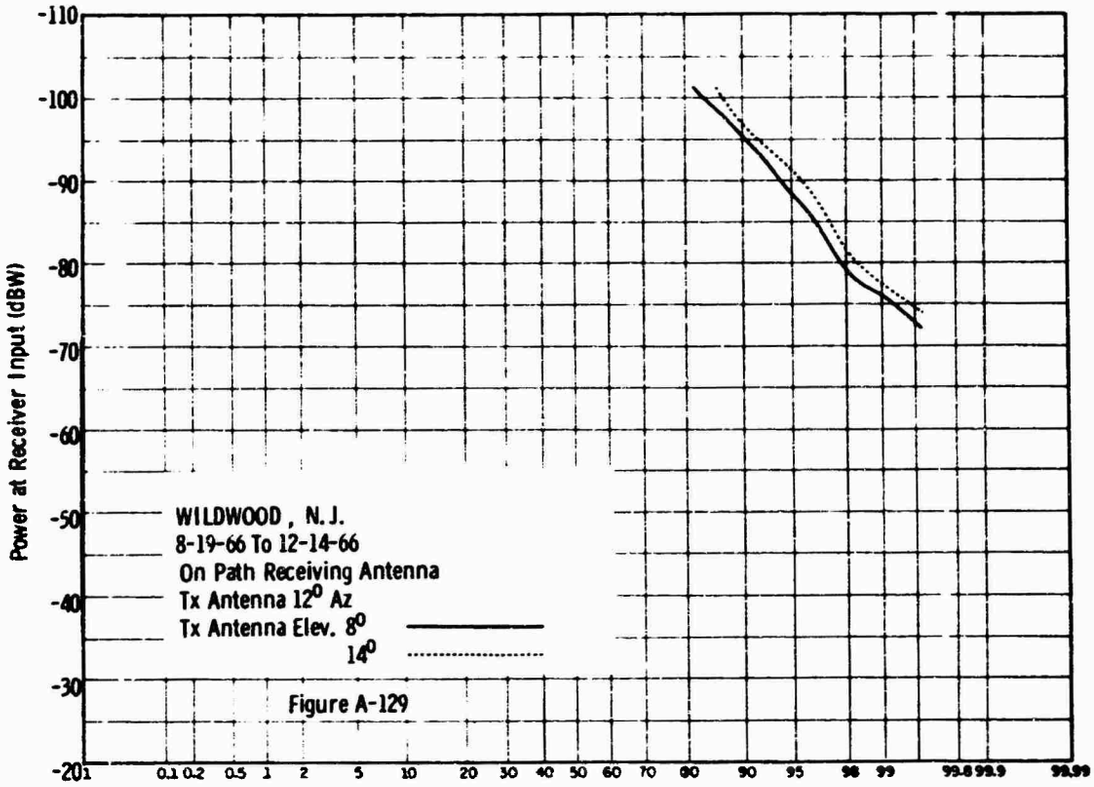



Figure A-129

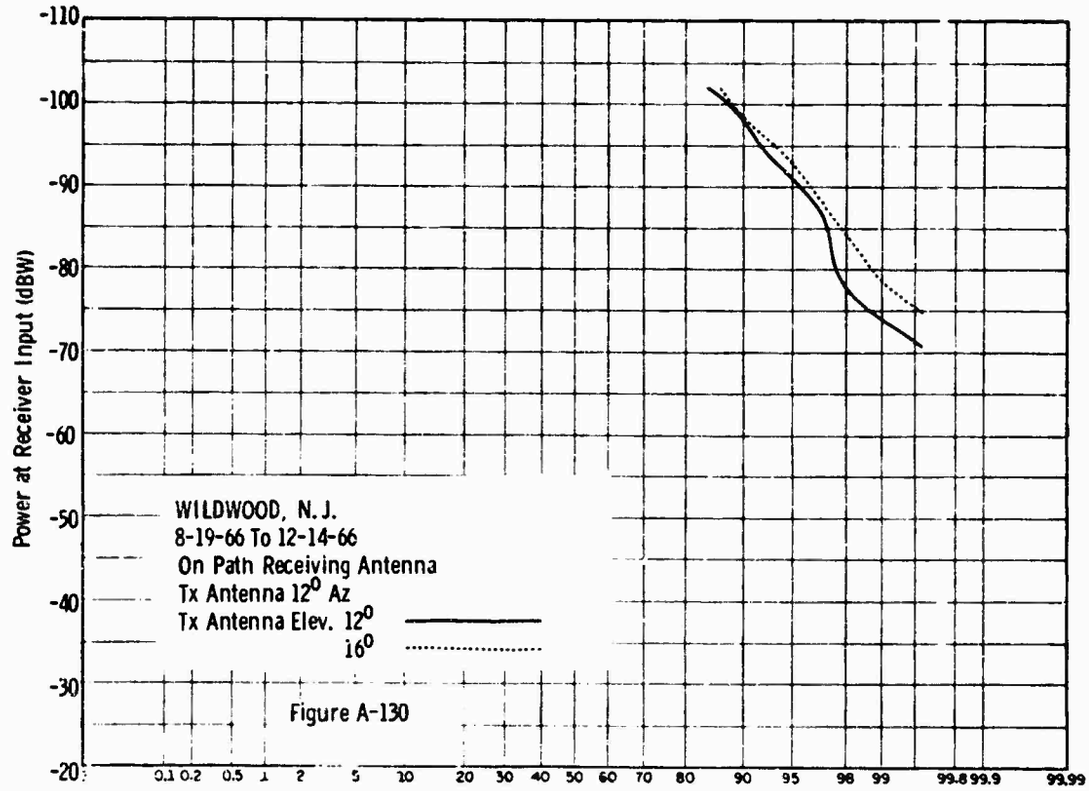



Figure A-130

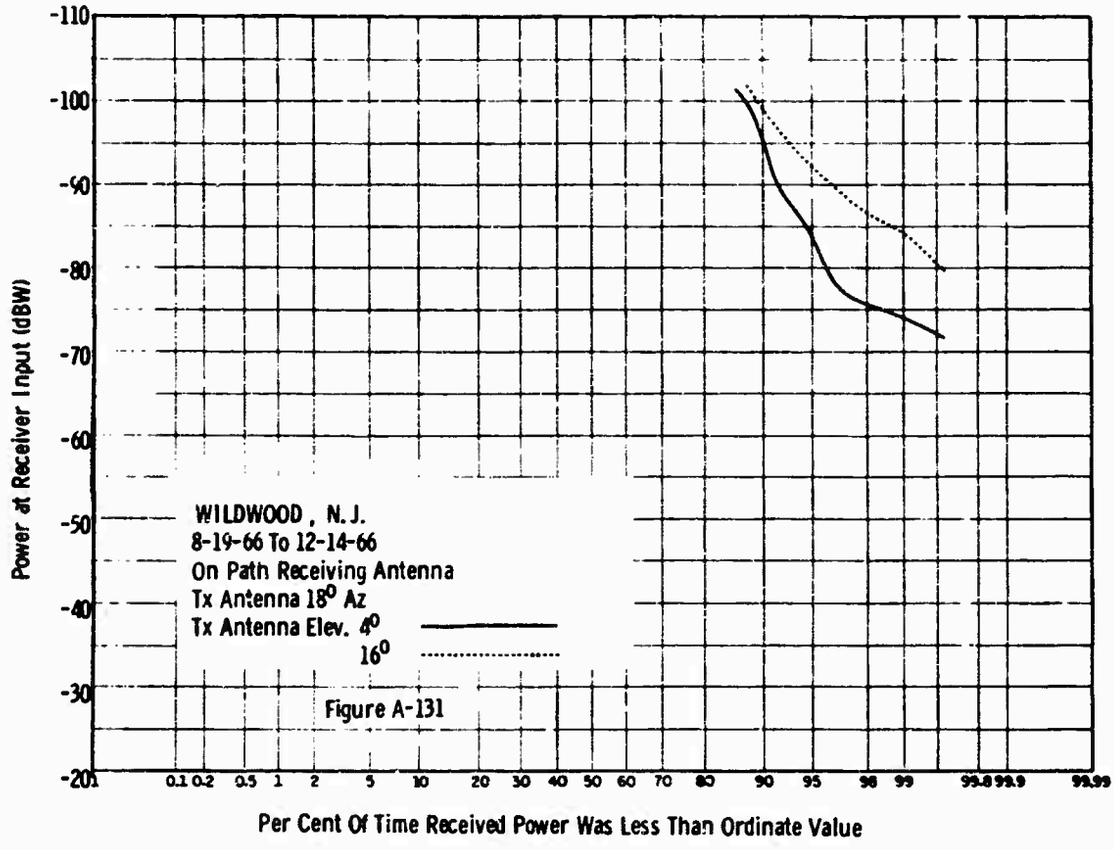



Figure A-131

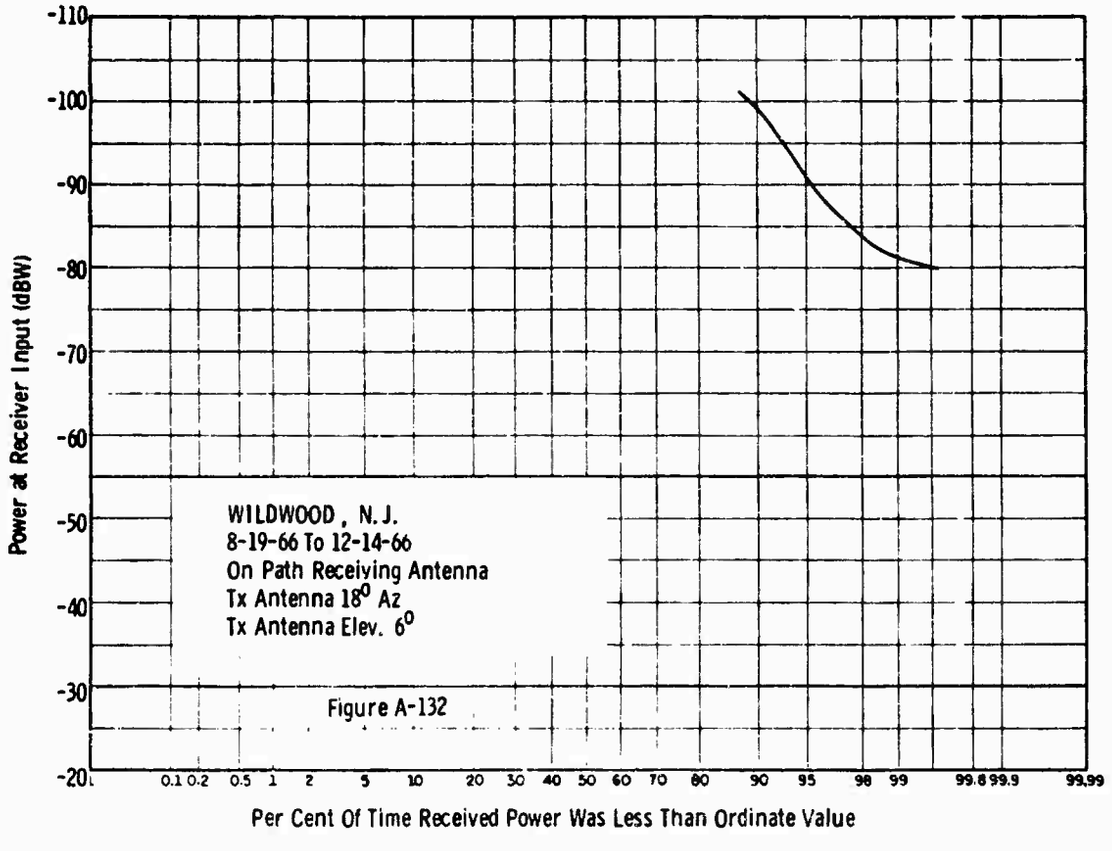



Figure A-132

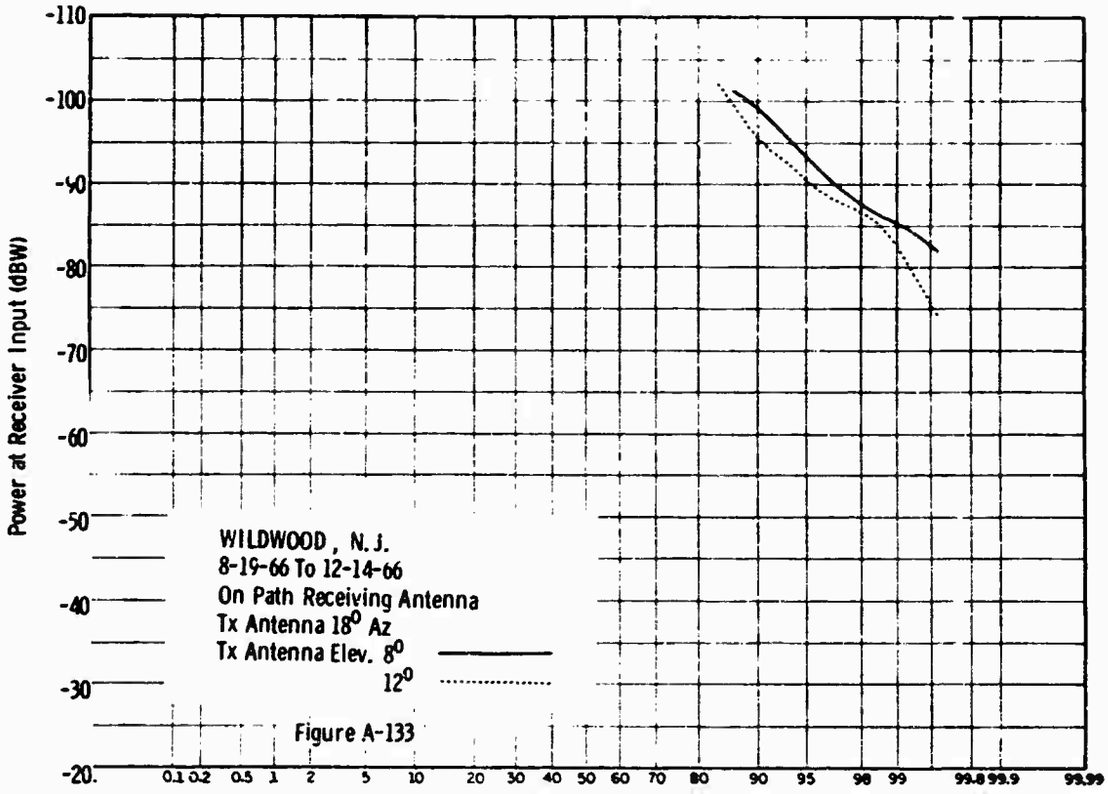



Figure A-133

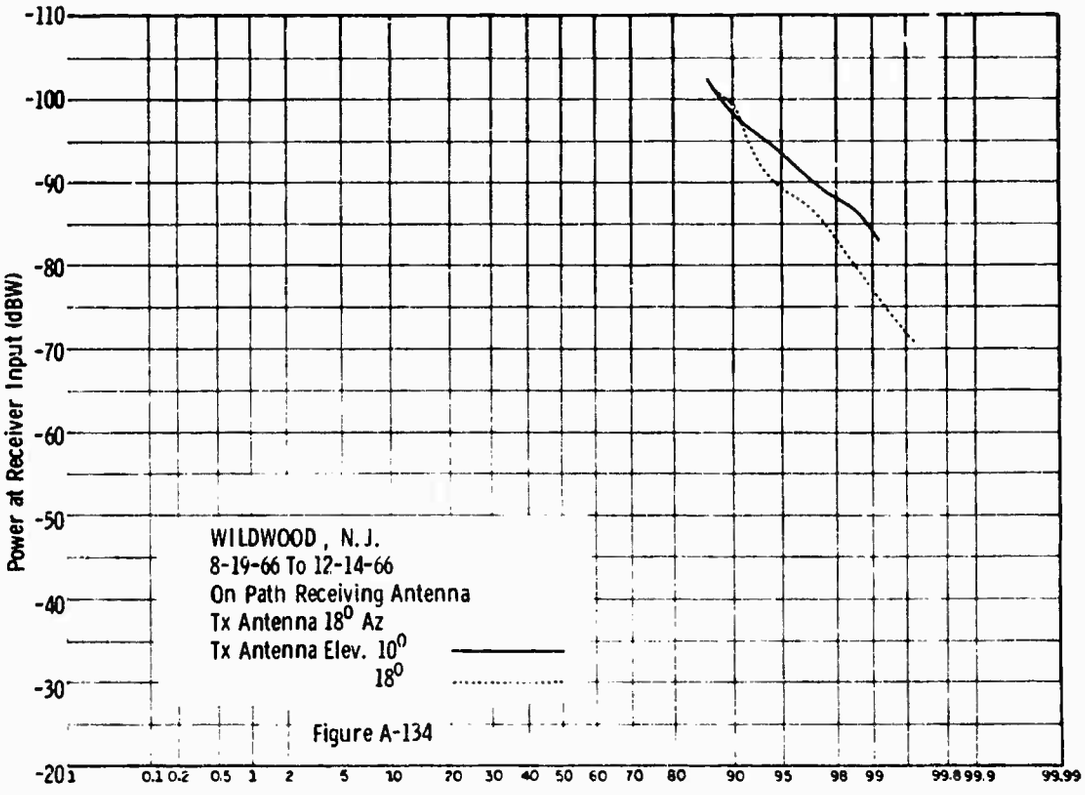



Figure A-134

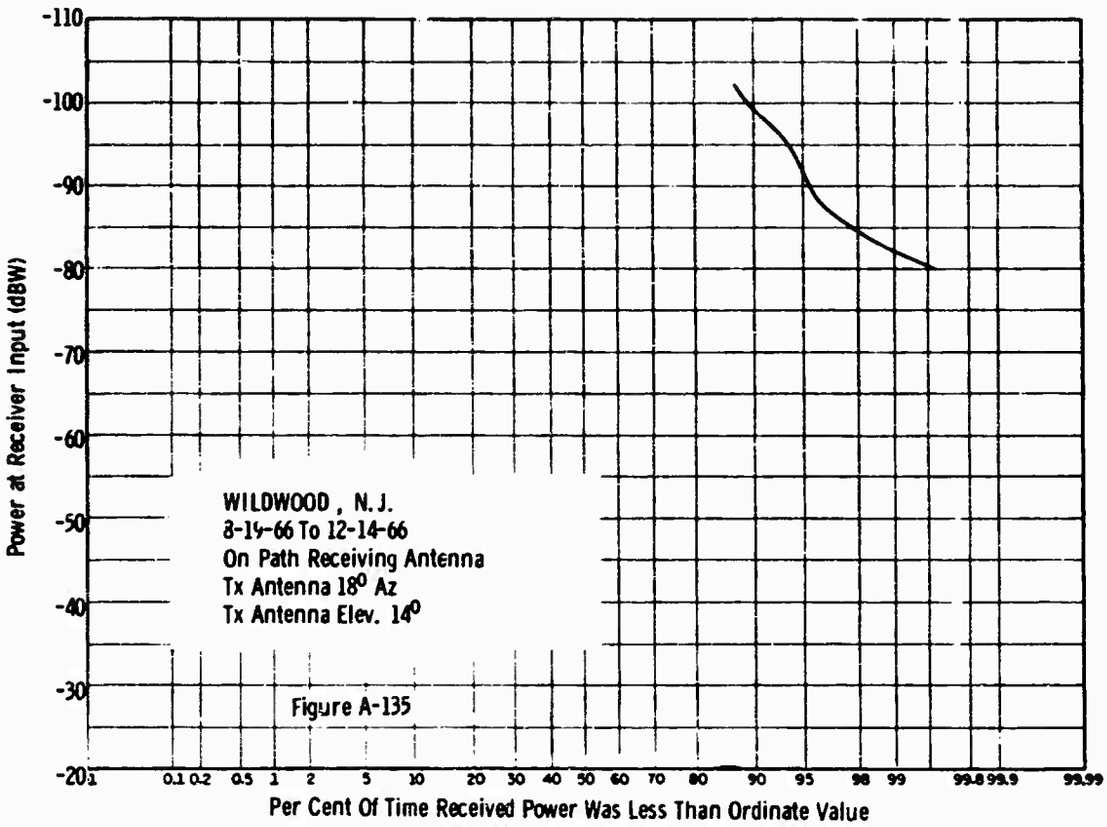
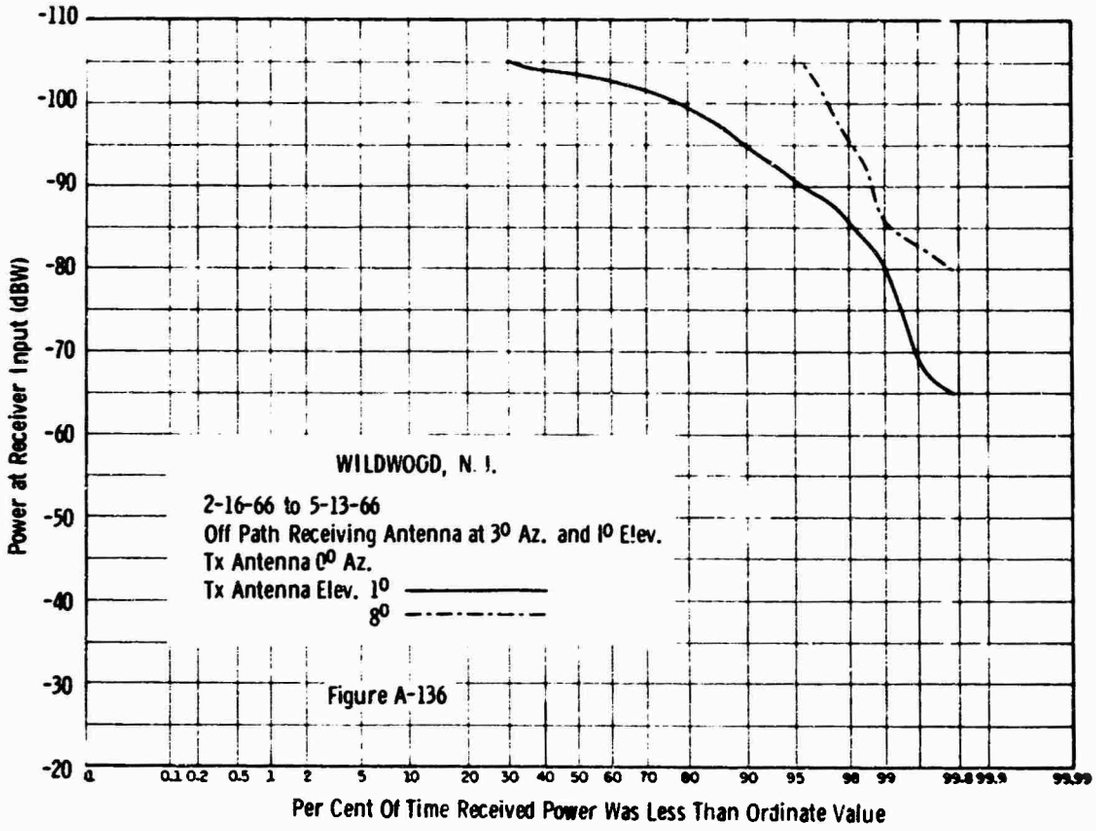
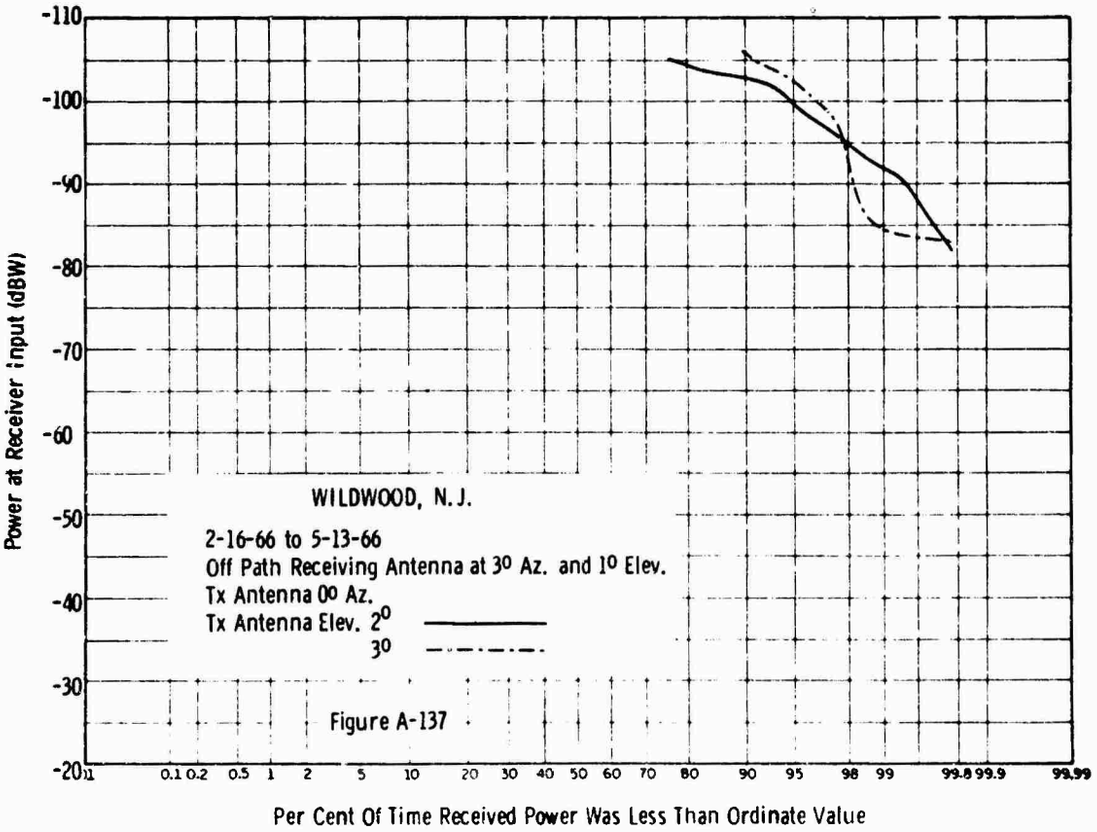

-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD , N.J.
8-14-66 To 12-14-66
On Path Receiving Antenna
Tx Antenna 18° Az
Tx Antenna Elev. 14°
1 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

Figure A-135


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N. J.
2-16-66 to 5-13-66
Off Path Receiving Antenna at 3° Az. and 1° Elev.
Tx Antenna 0° Az.
Tx Antenna Elev. 1°
8°
Figure A-136
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
WILDWOOD, N.J.
2-16-66 to 5-13-66
Off Path Receiving Antenna at 3° Az. and 1° Elev.
Tx Antenna 0° Az.
Tx Antenna Elev. 2°
3°
Figure A-137
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

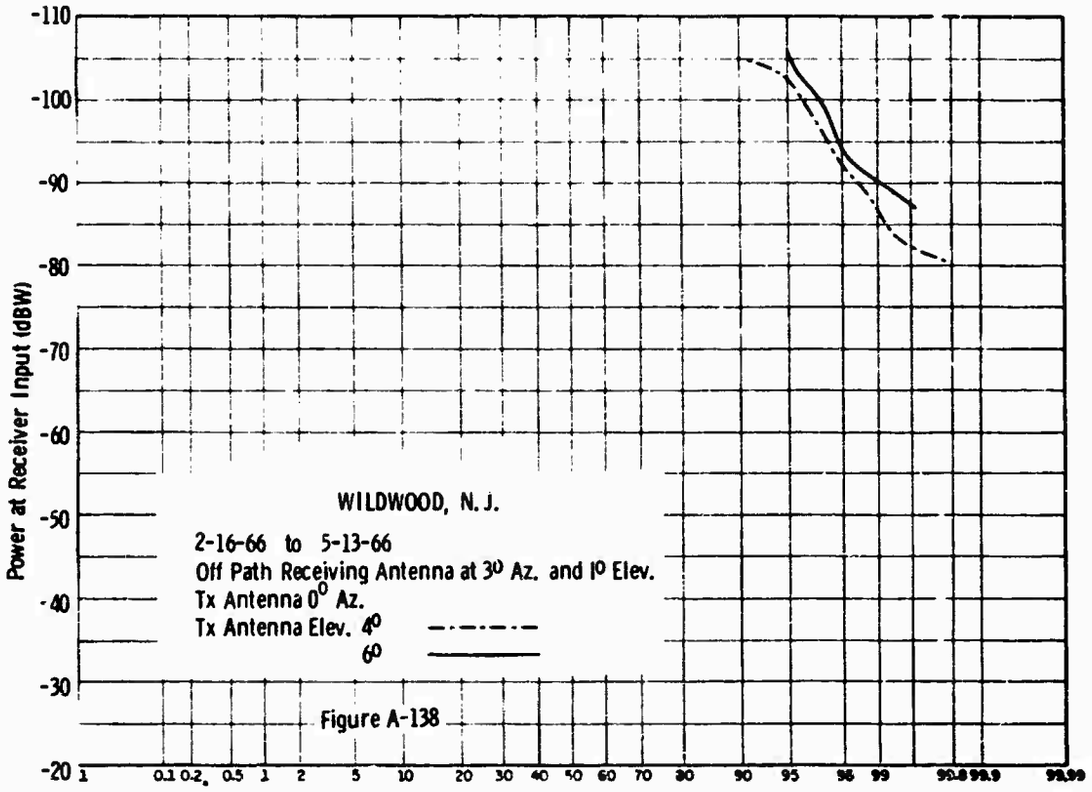



Figure A-138

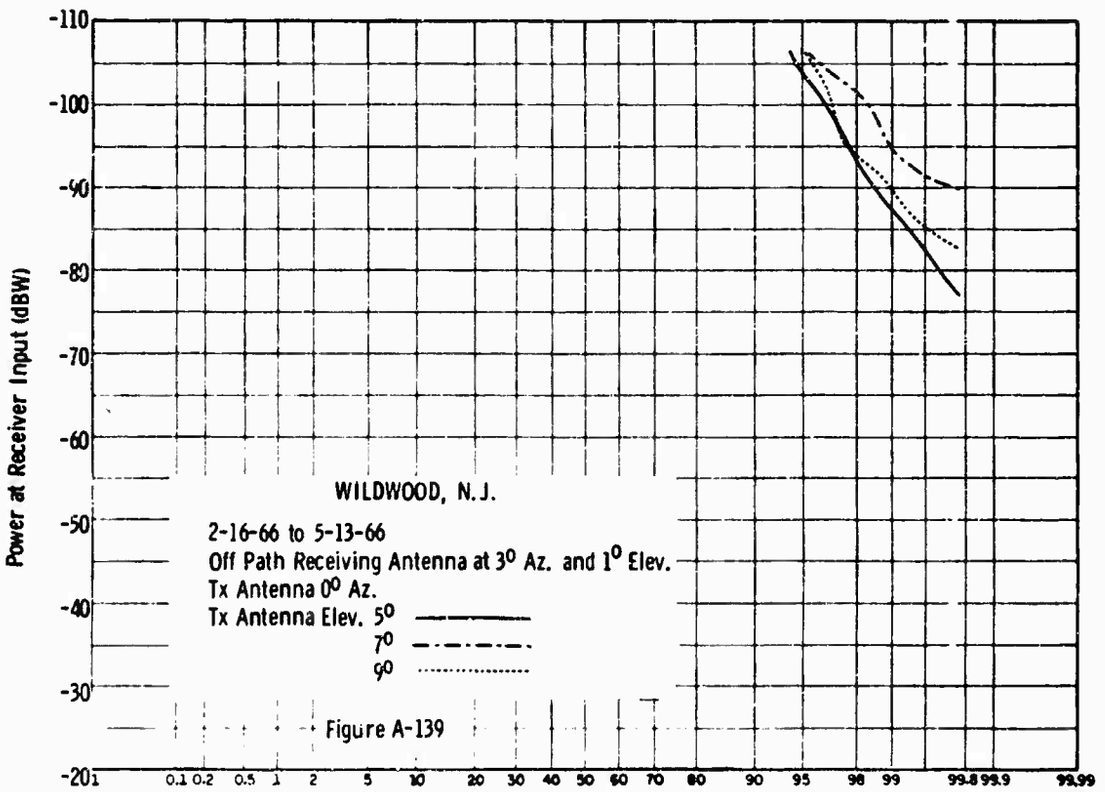



Figure A-139

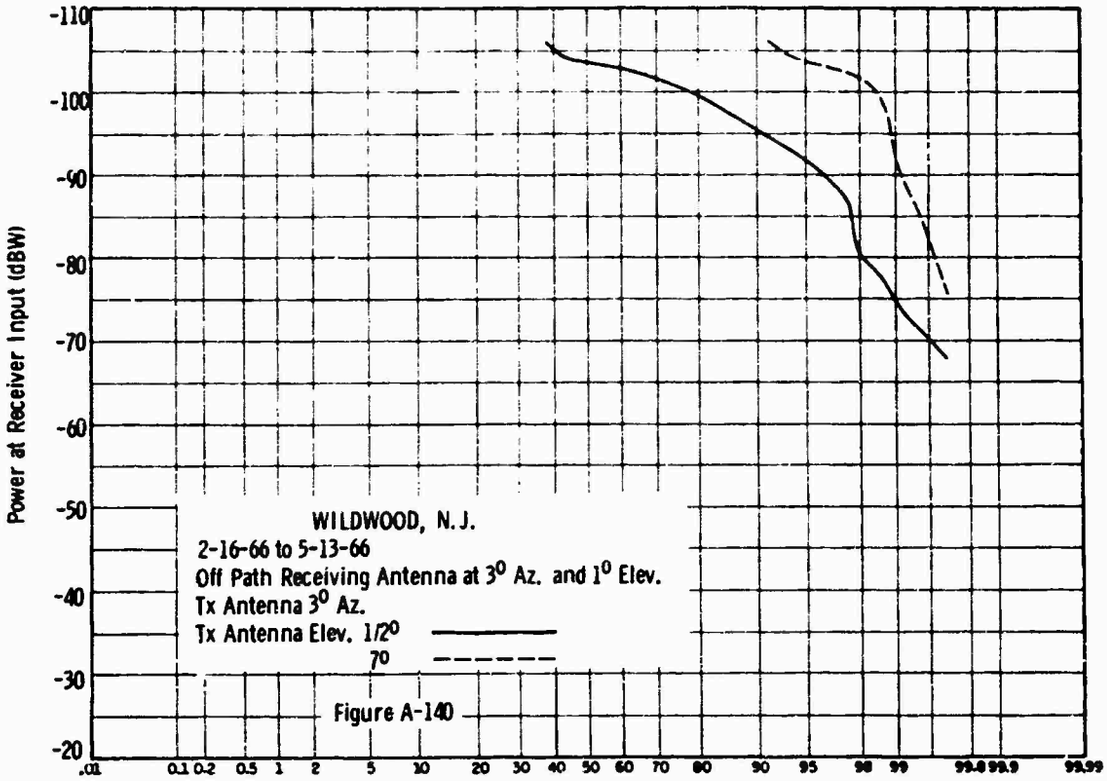



Figure A-140

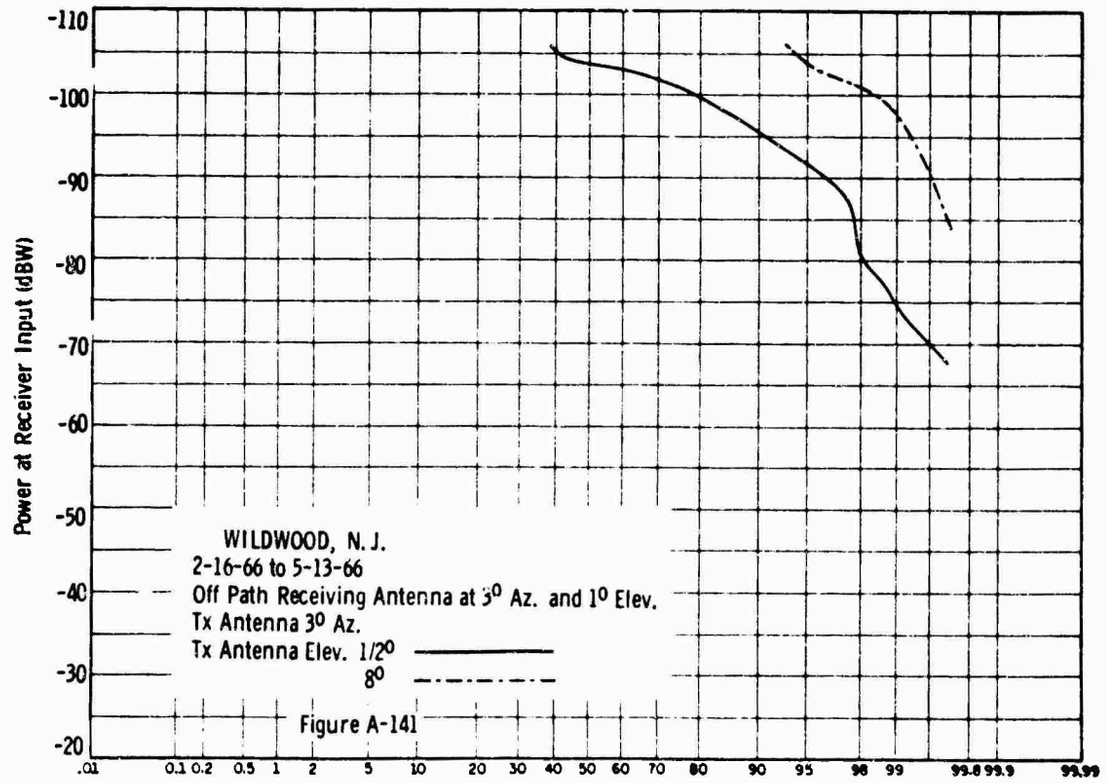



Figure A-141

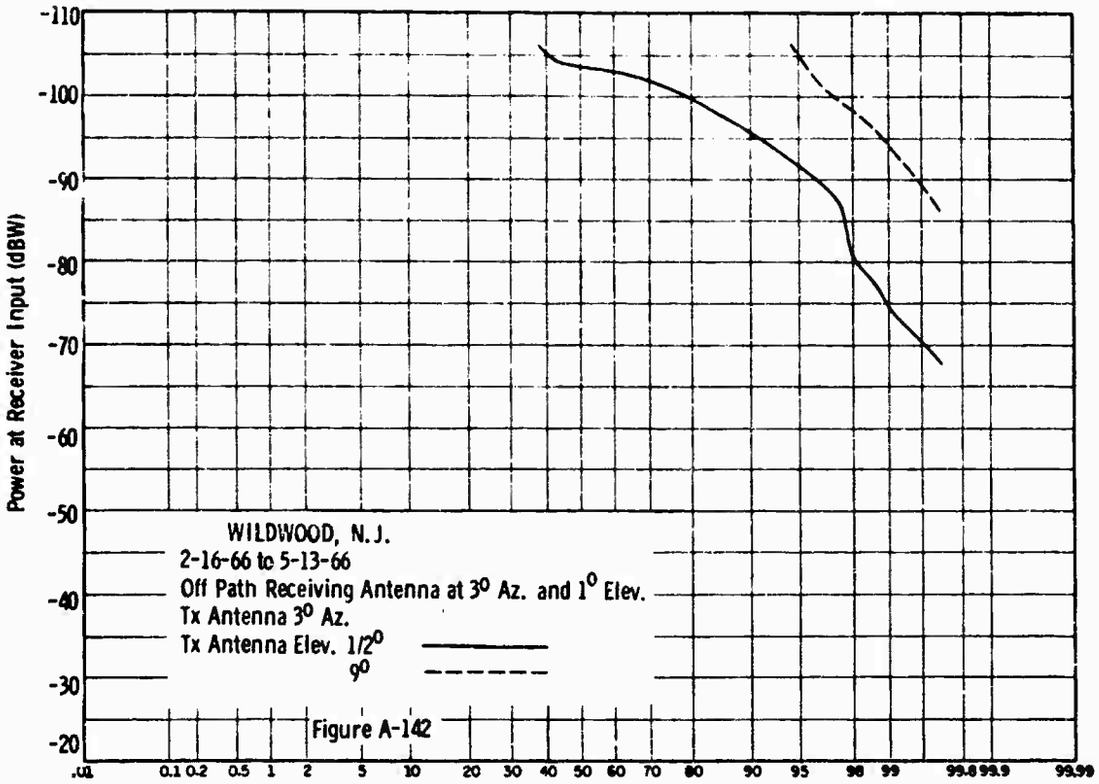



Figure A-142

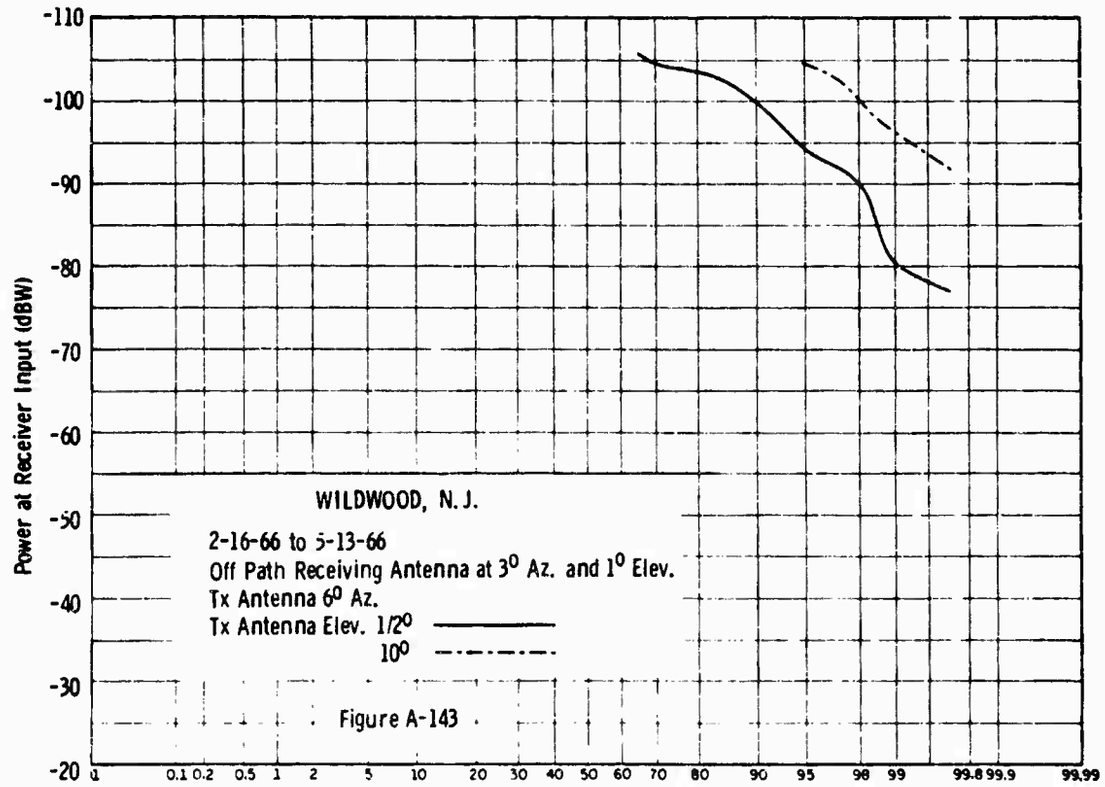



Figure A-143

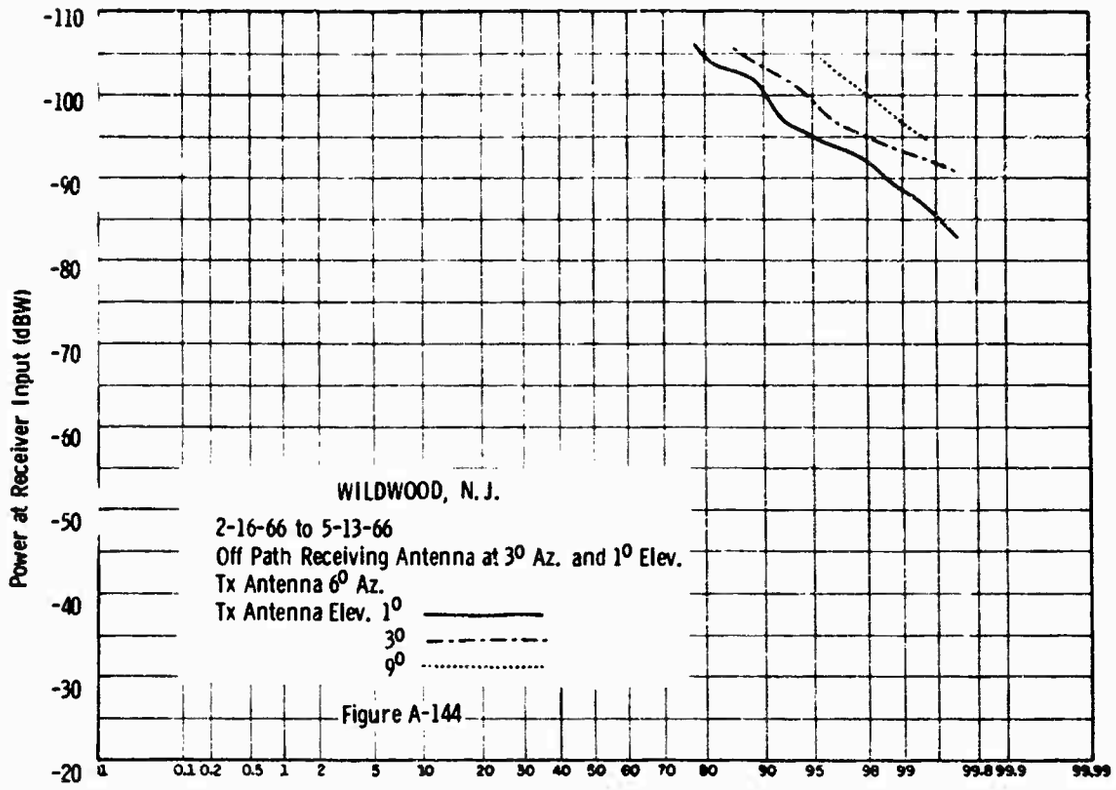



Figure A-144

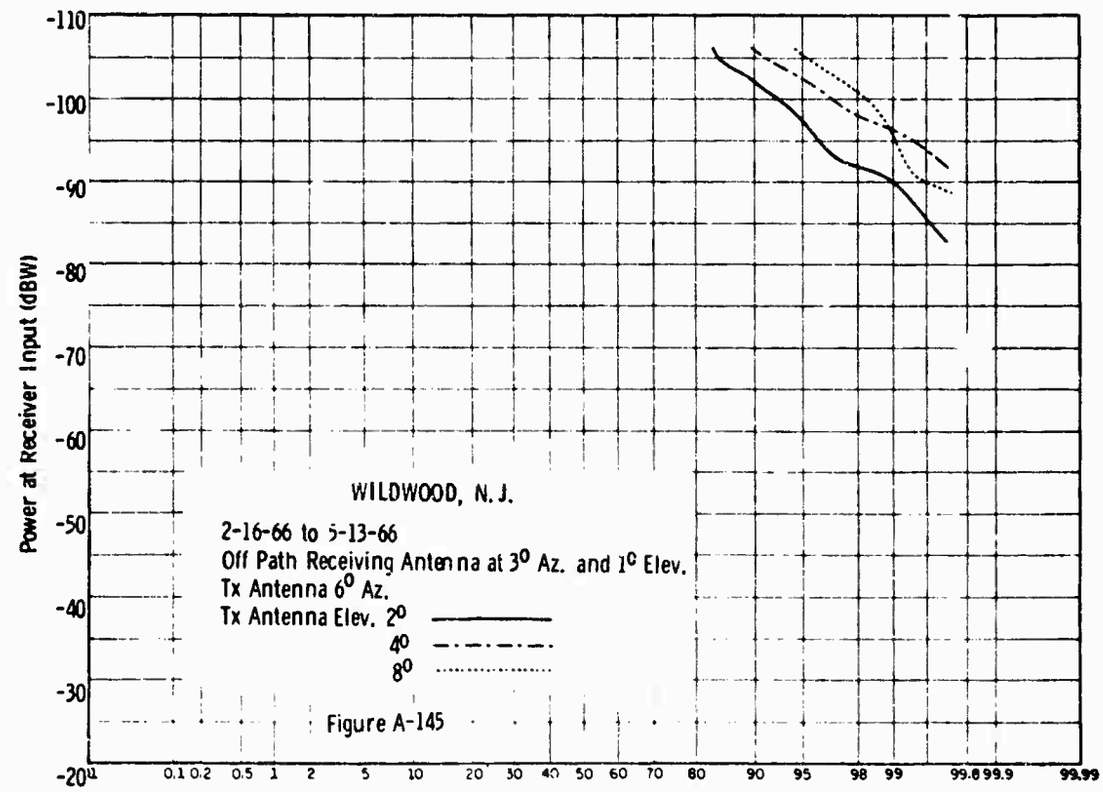



Figure A-145

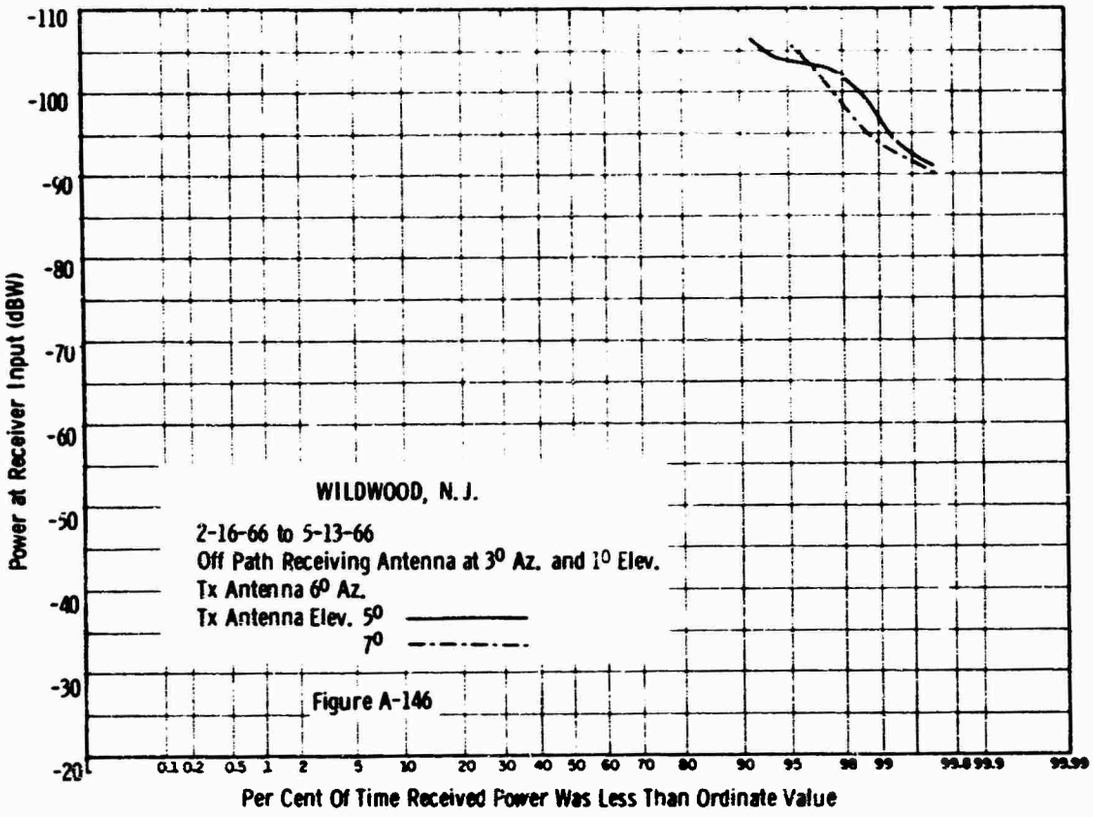



Figure A-146

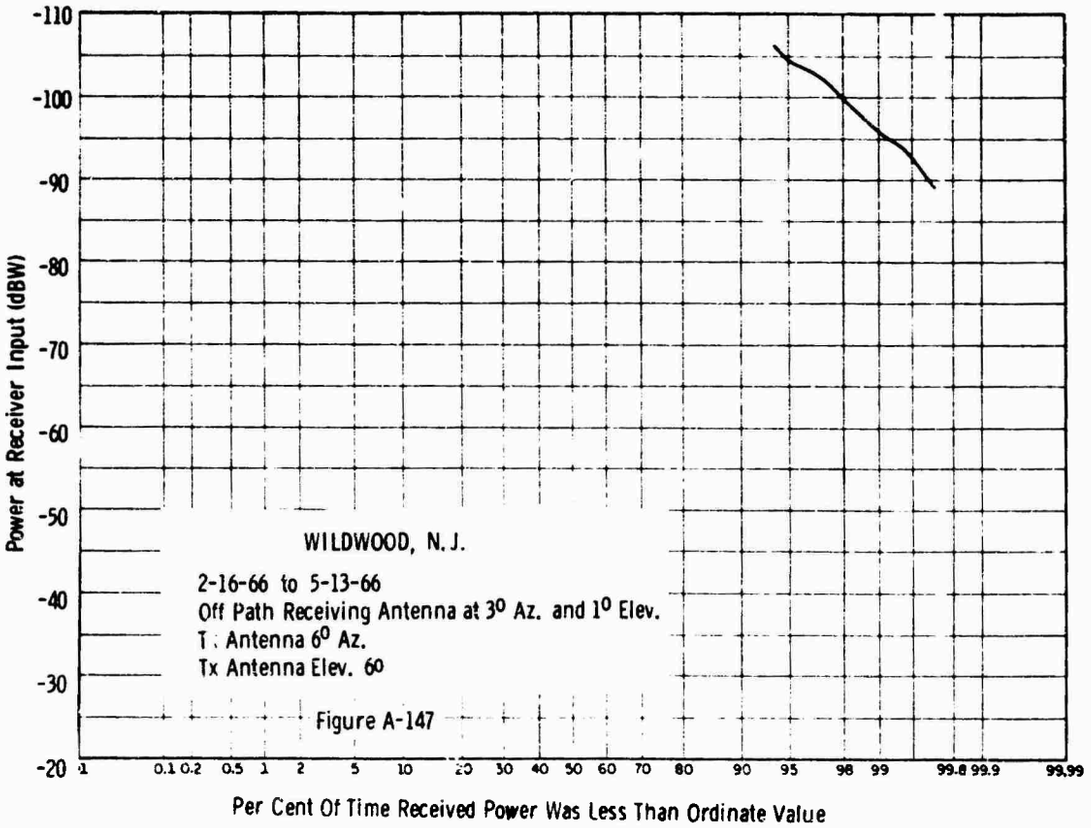



Figure A-147

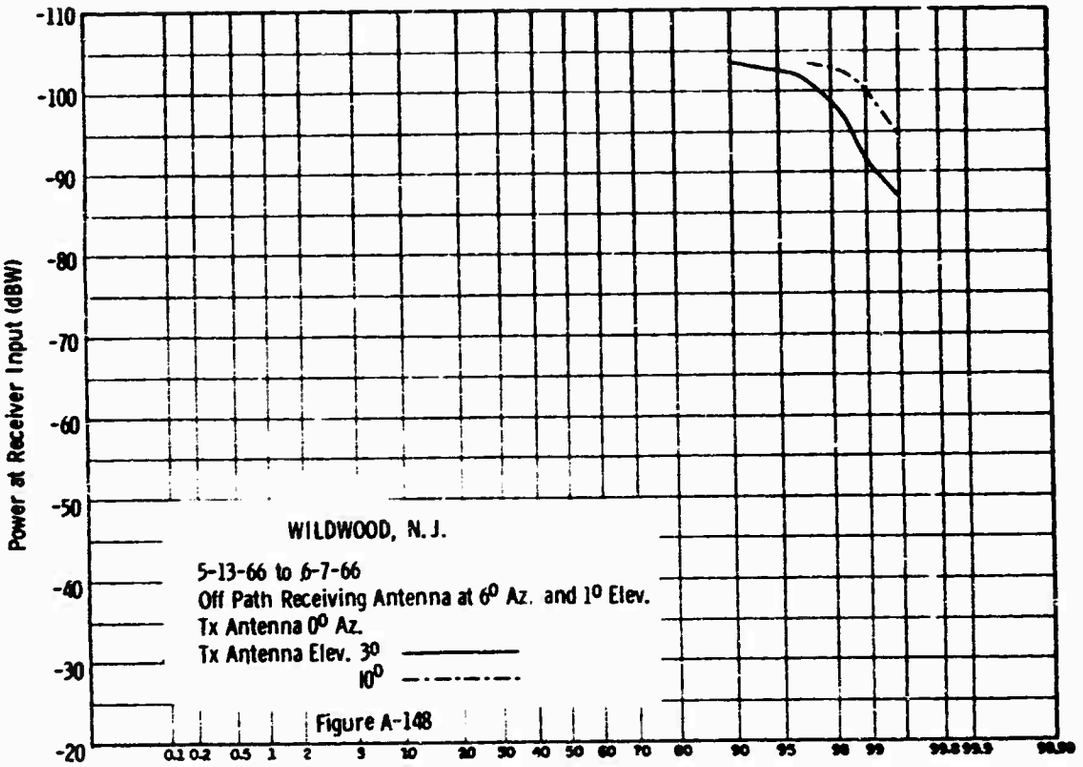



Figure A-148

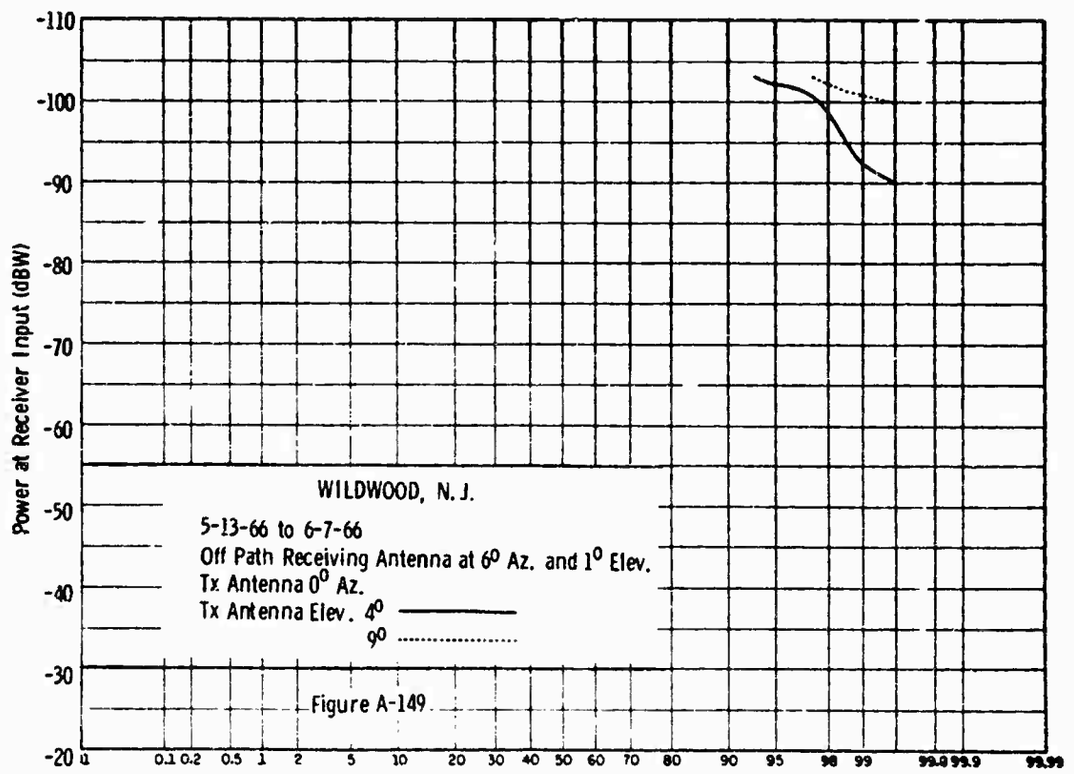



Figure A-149

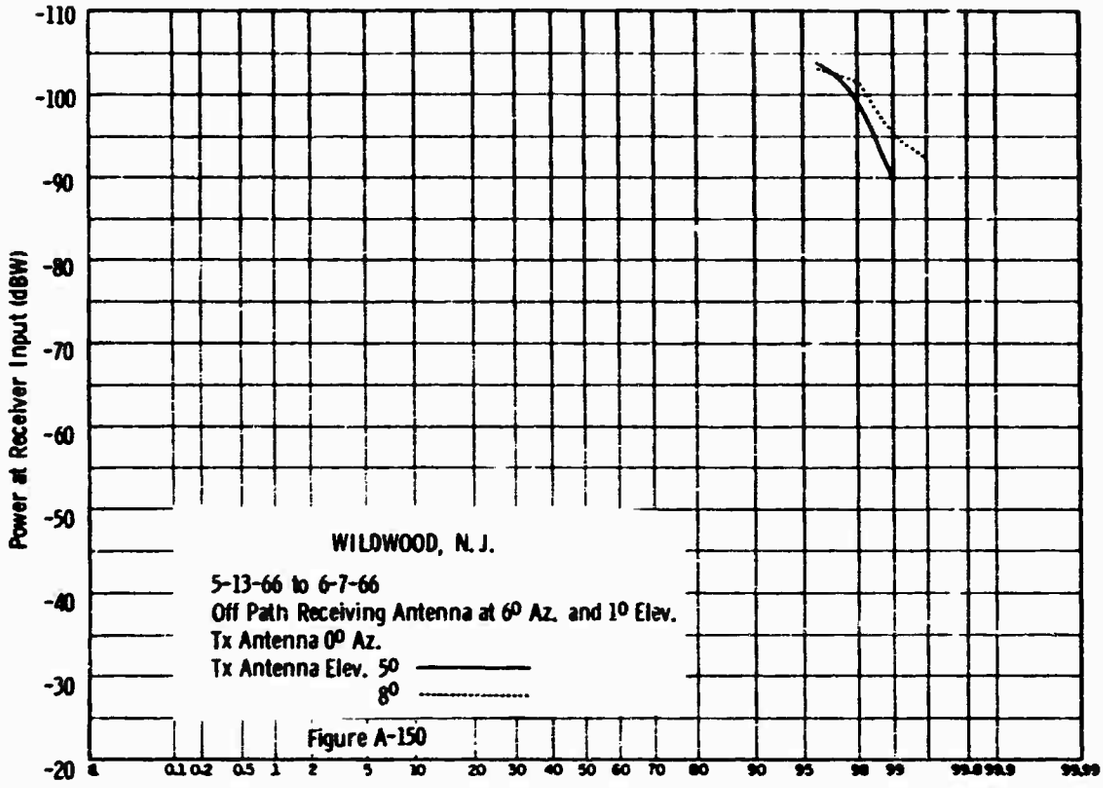



Figure A-150

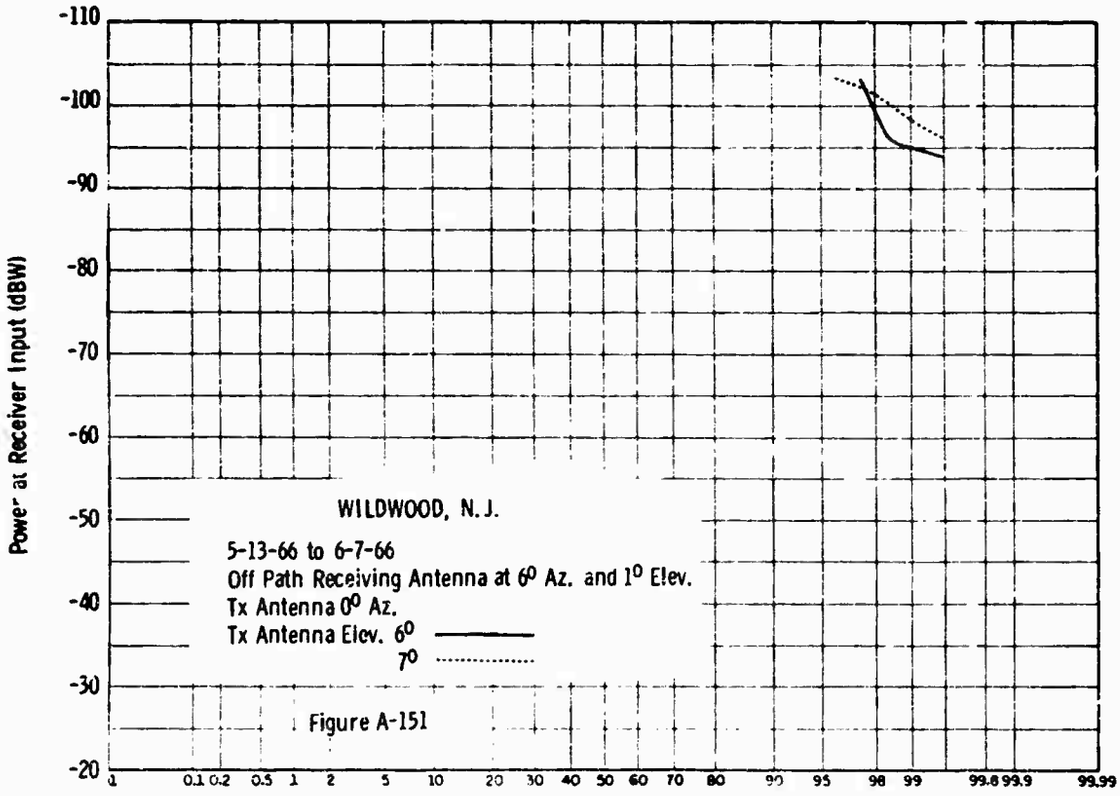



Figure A-151

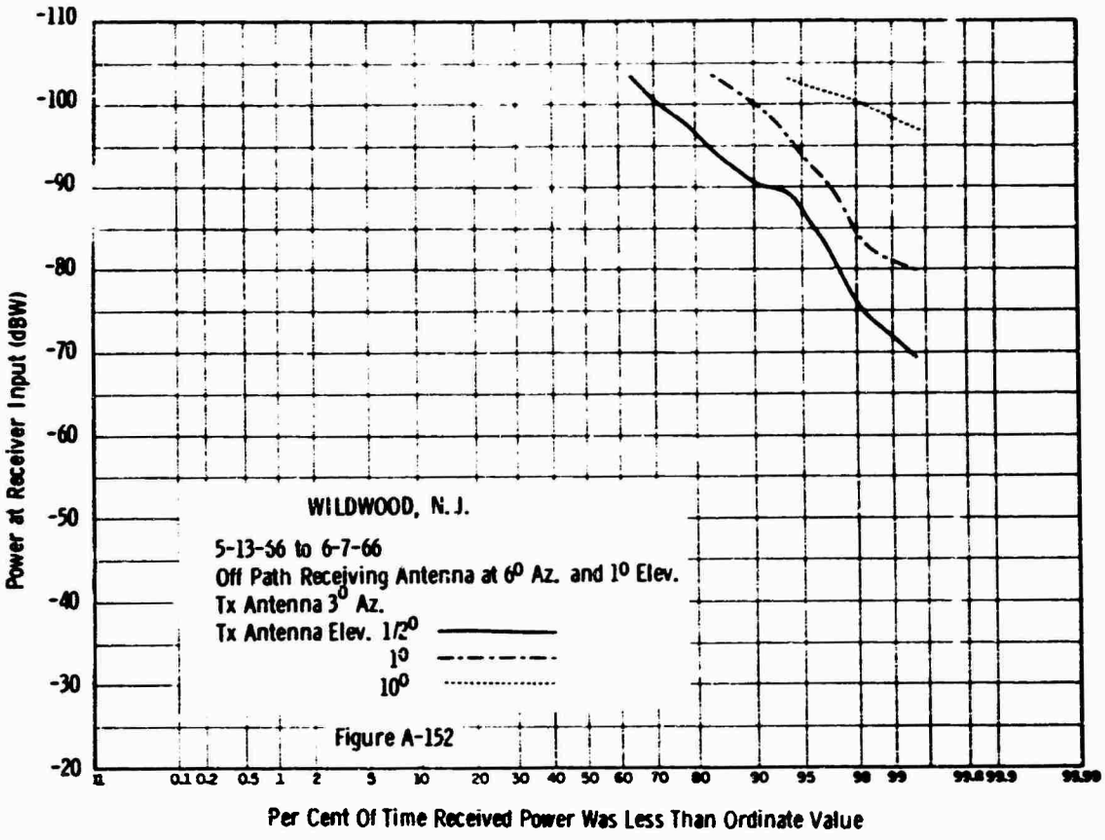



Figure A-152

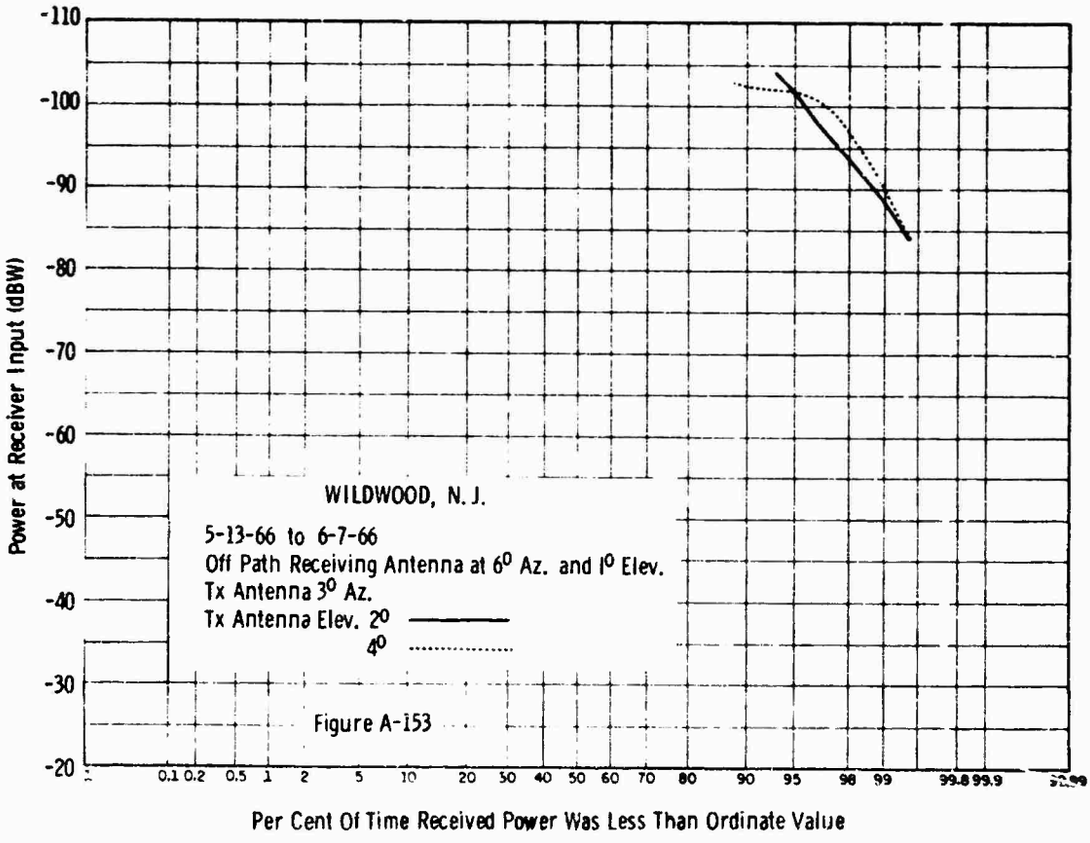



Figure A-153

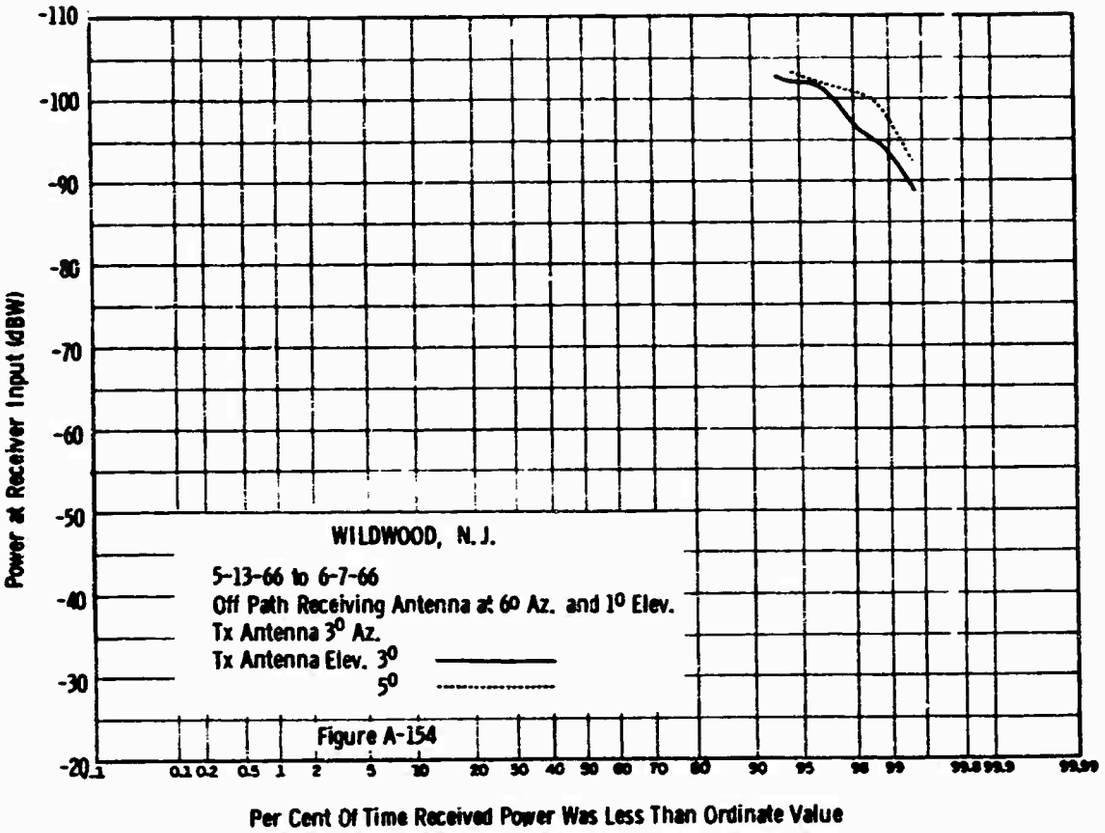



Figure A-154

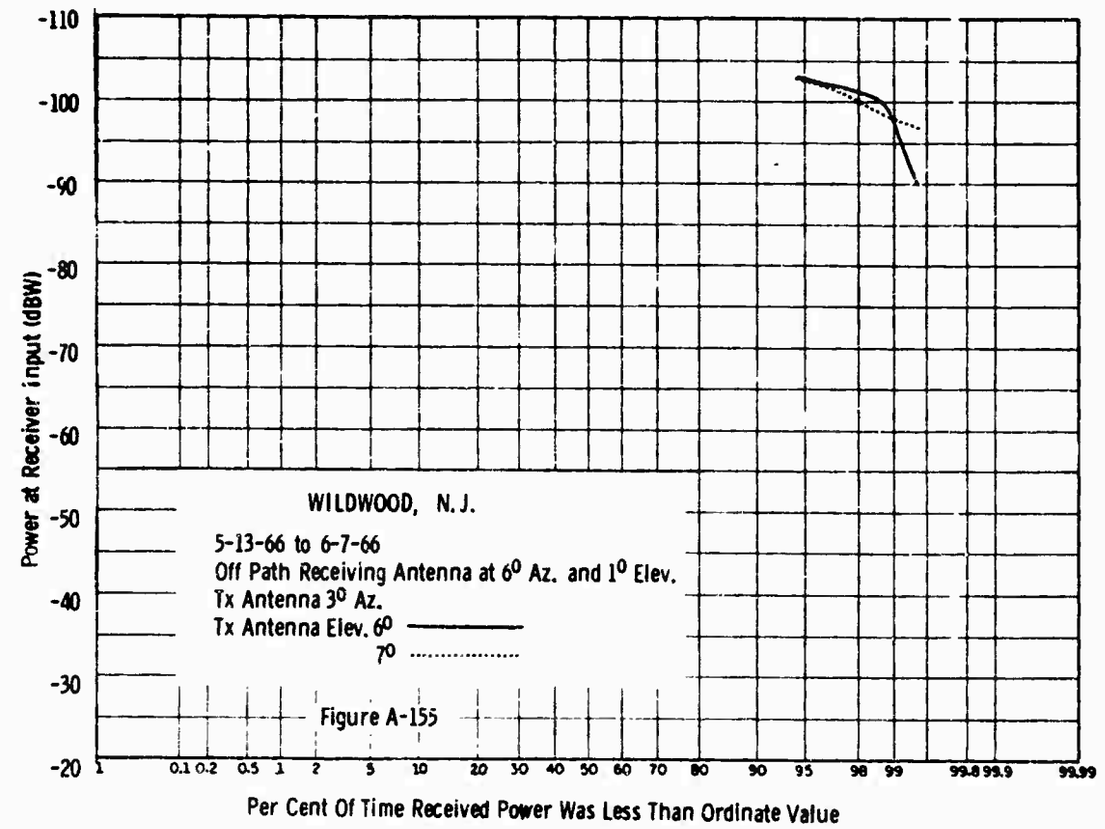



Figure A-155

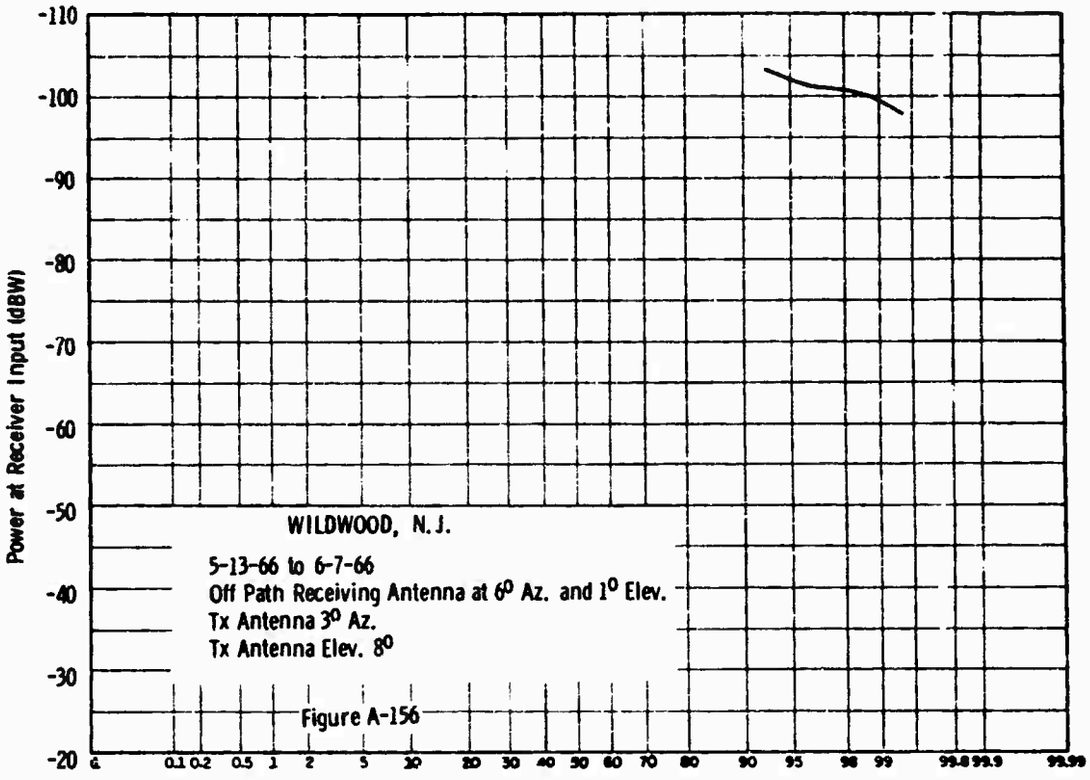



Figure A-156

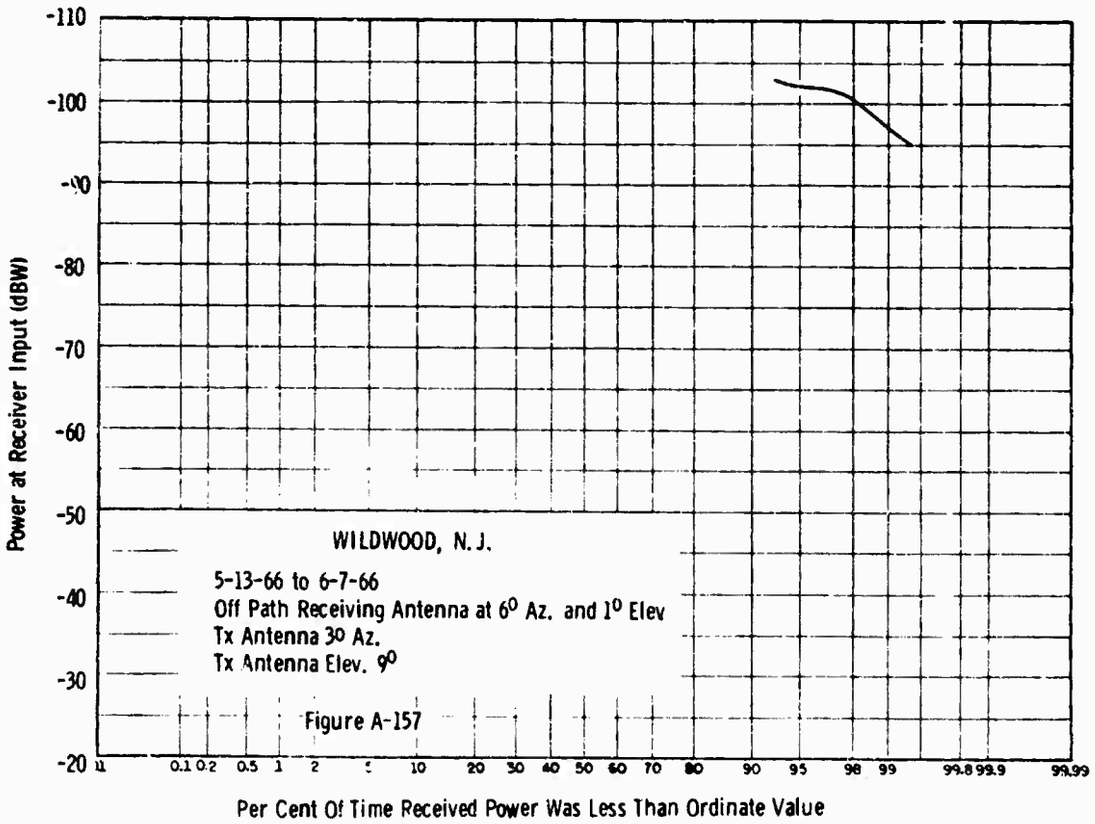



Figure A-157

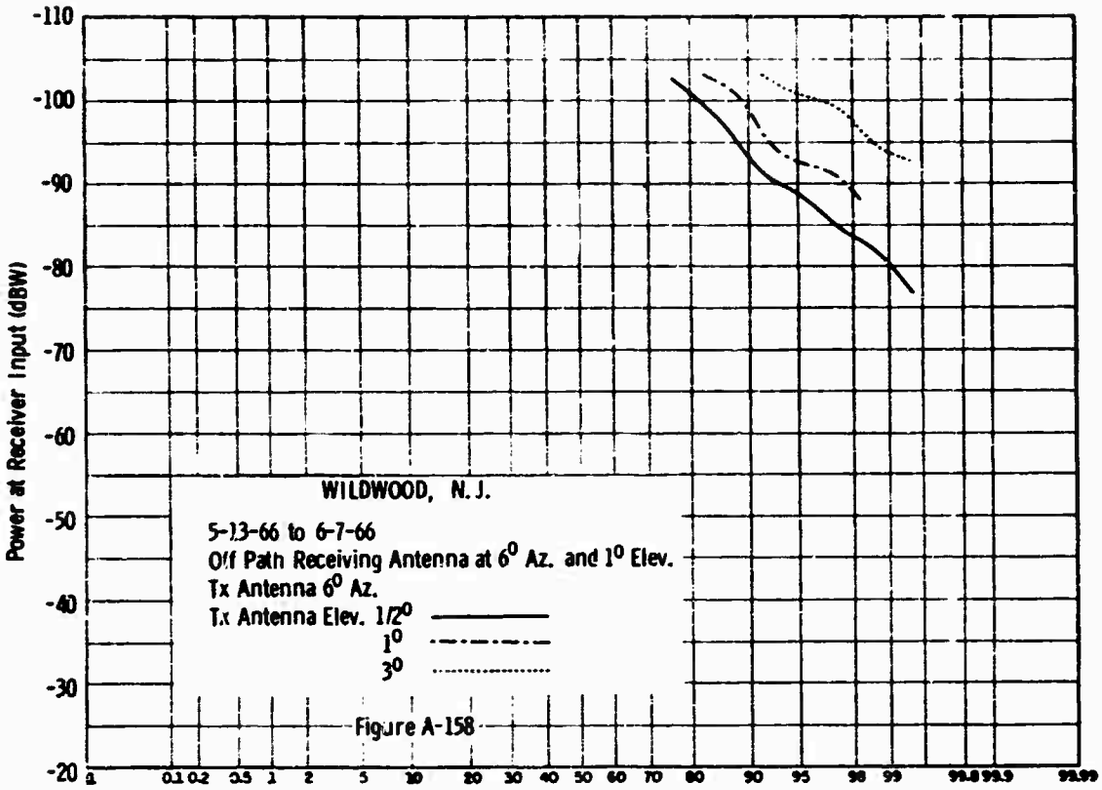



Figure A-158

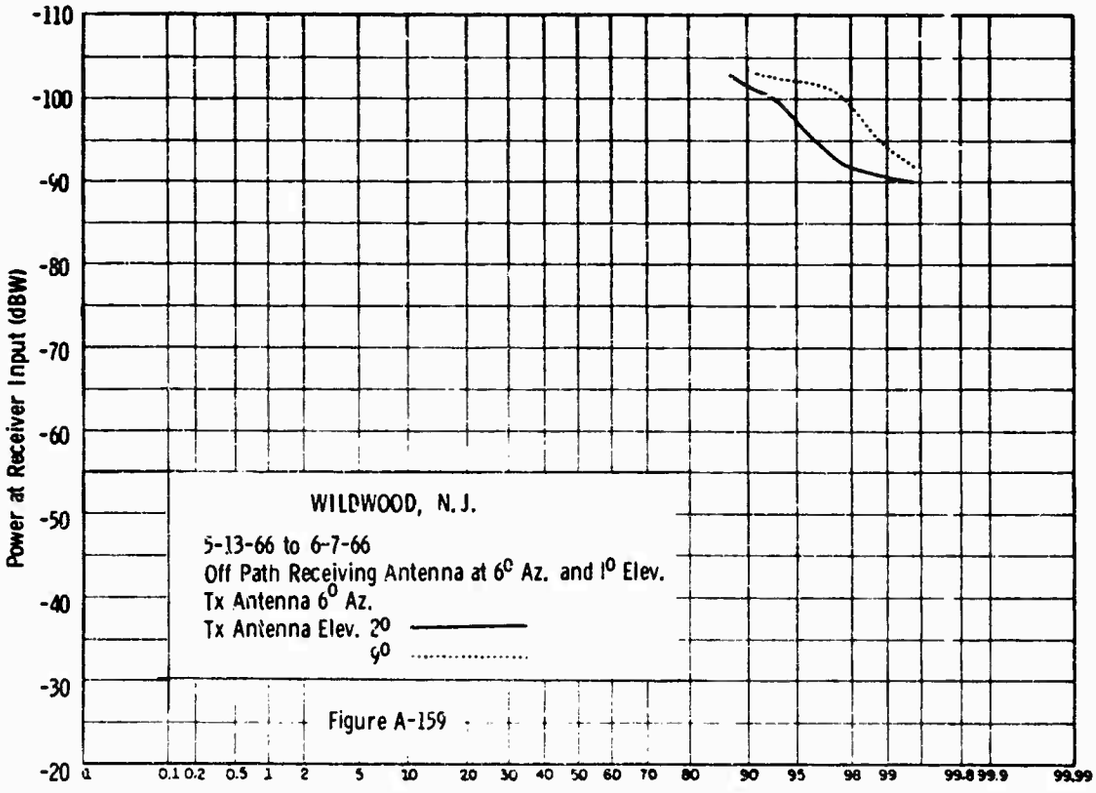



Figure A-159

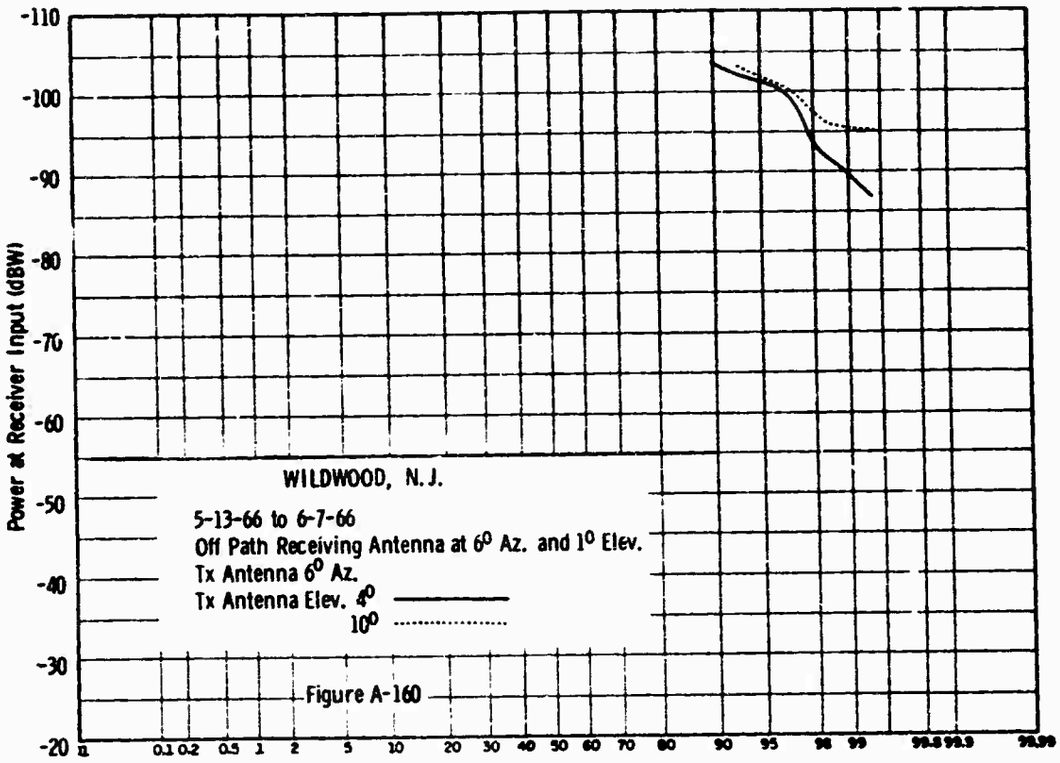



Figure A-160

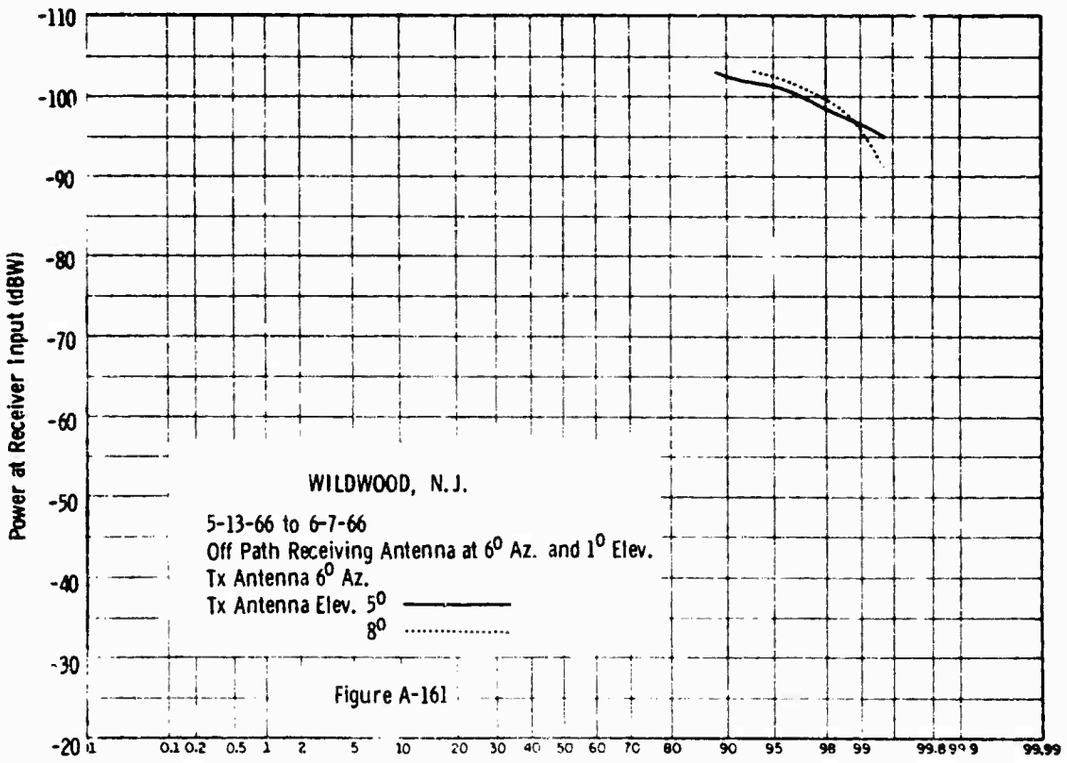



Figure A-161

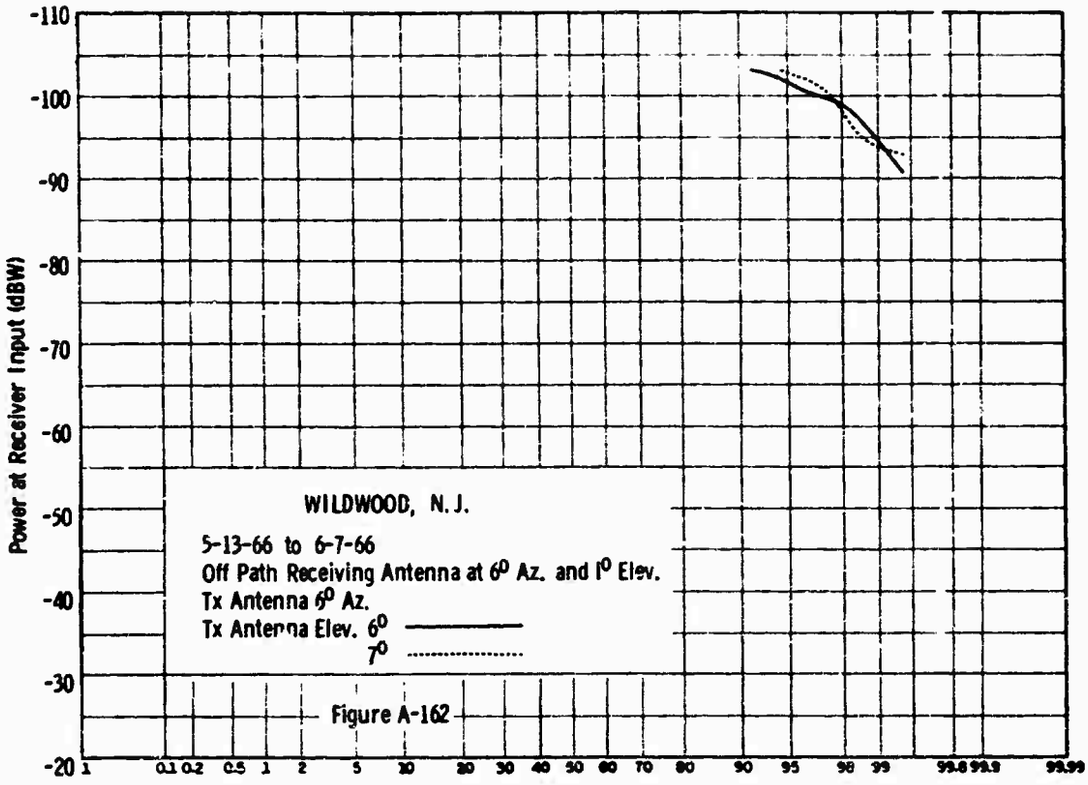



Figure A-162

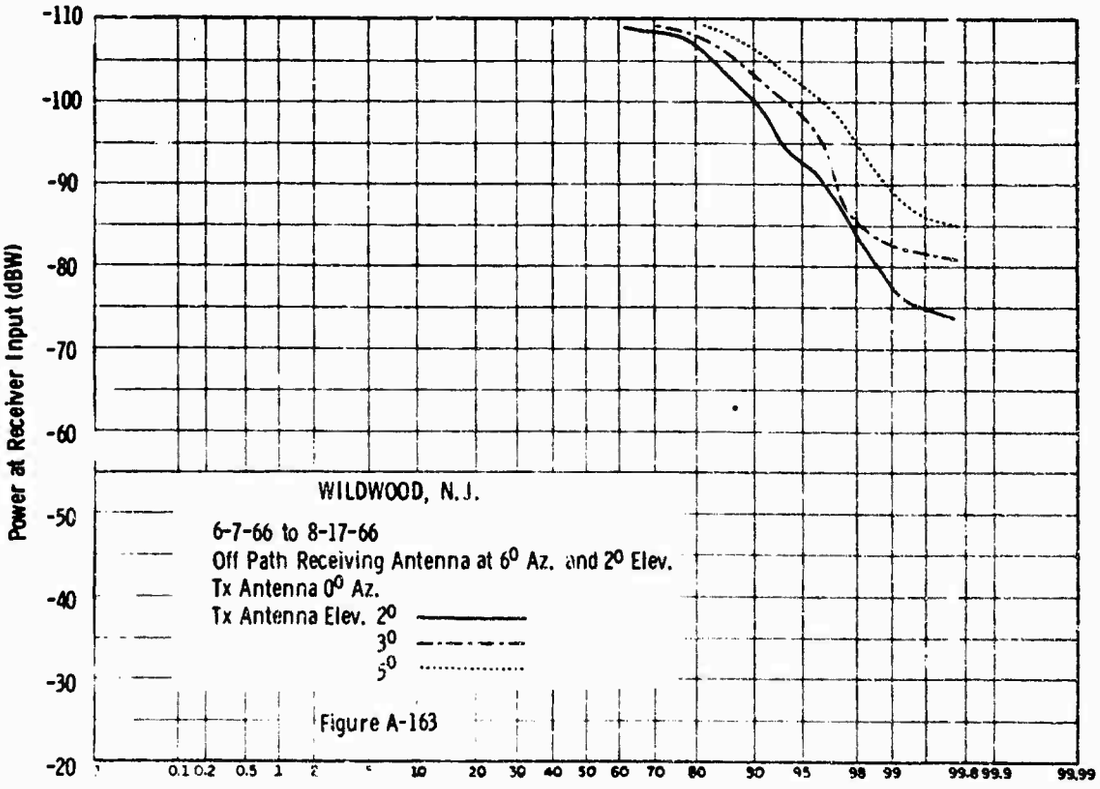



Figure A-163

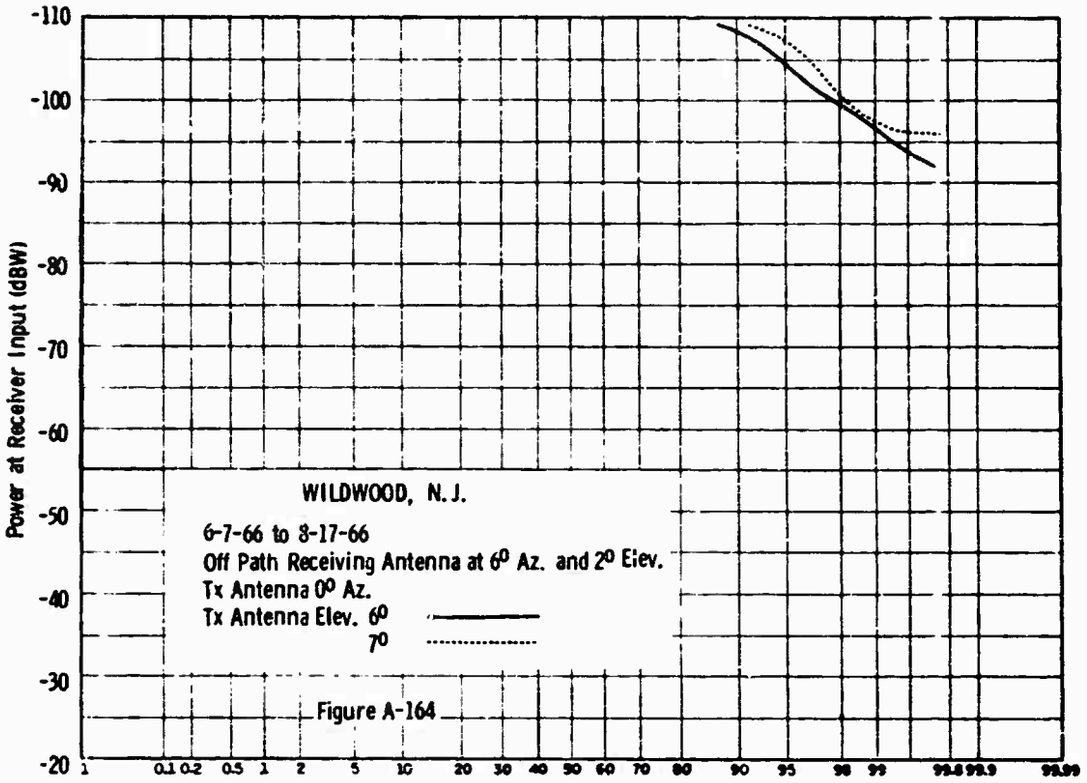



Figure A-164

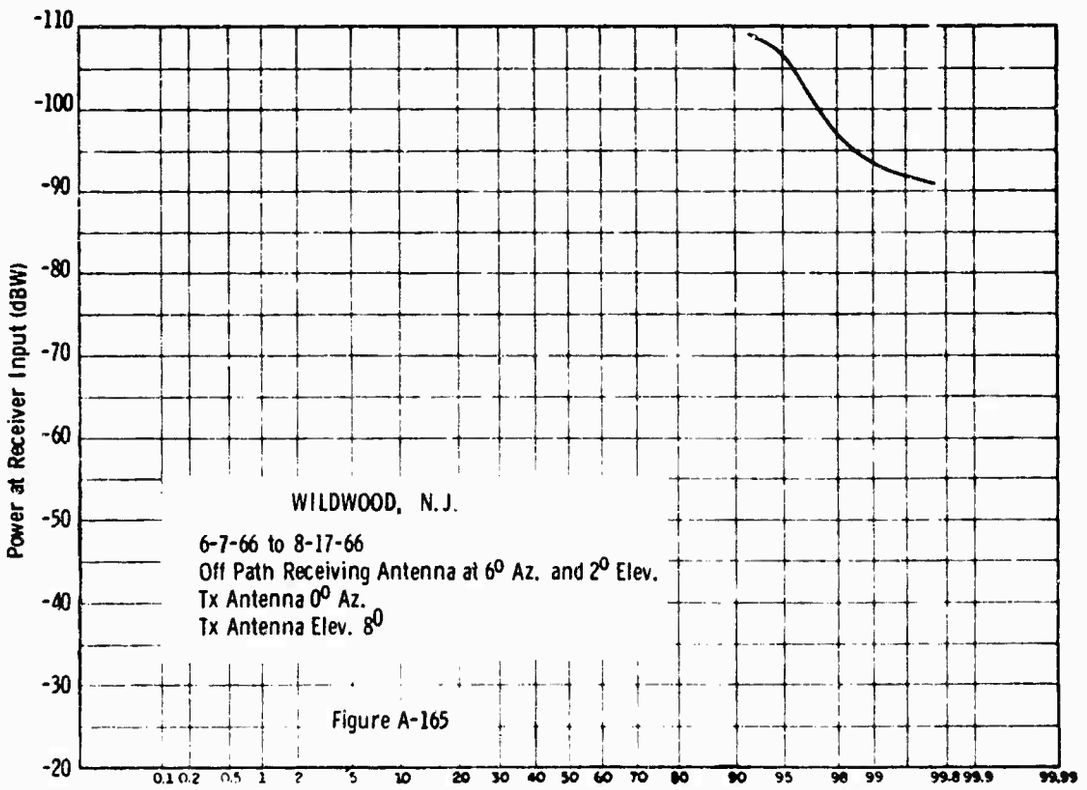



Figure A-165

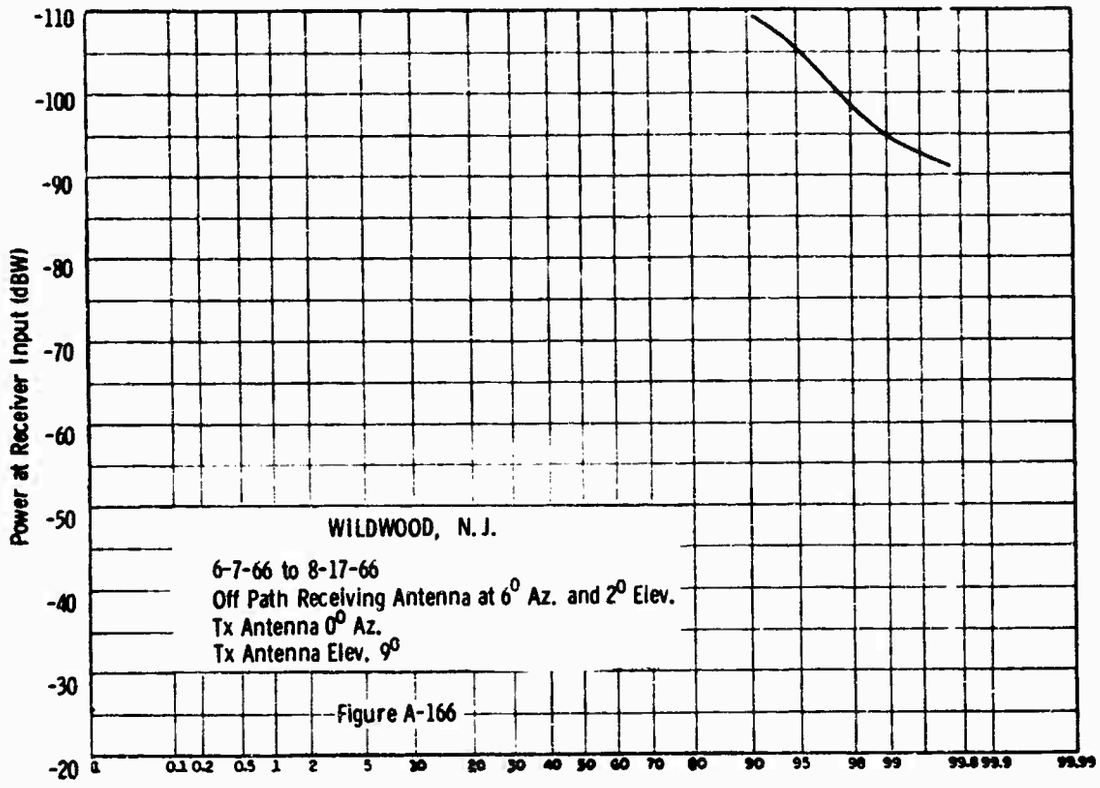



Figure A-166

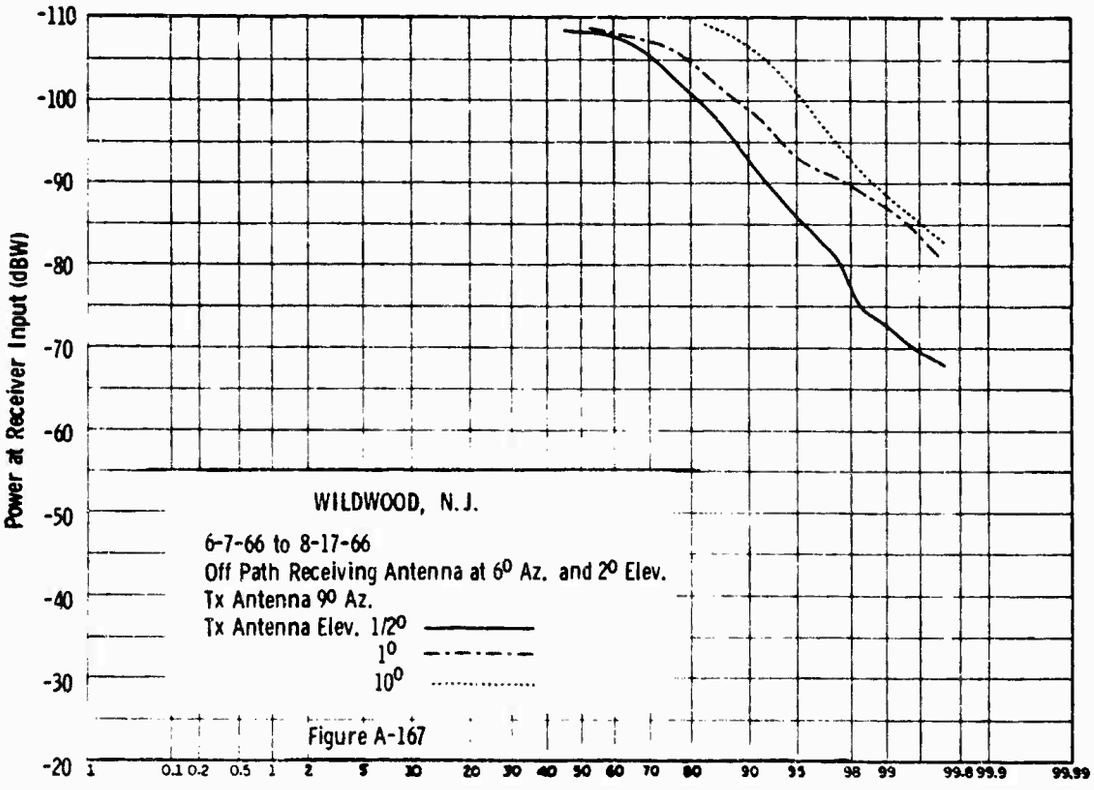



Figure A-167

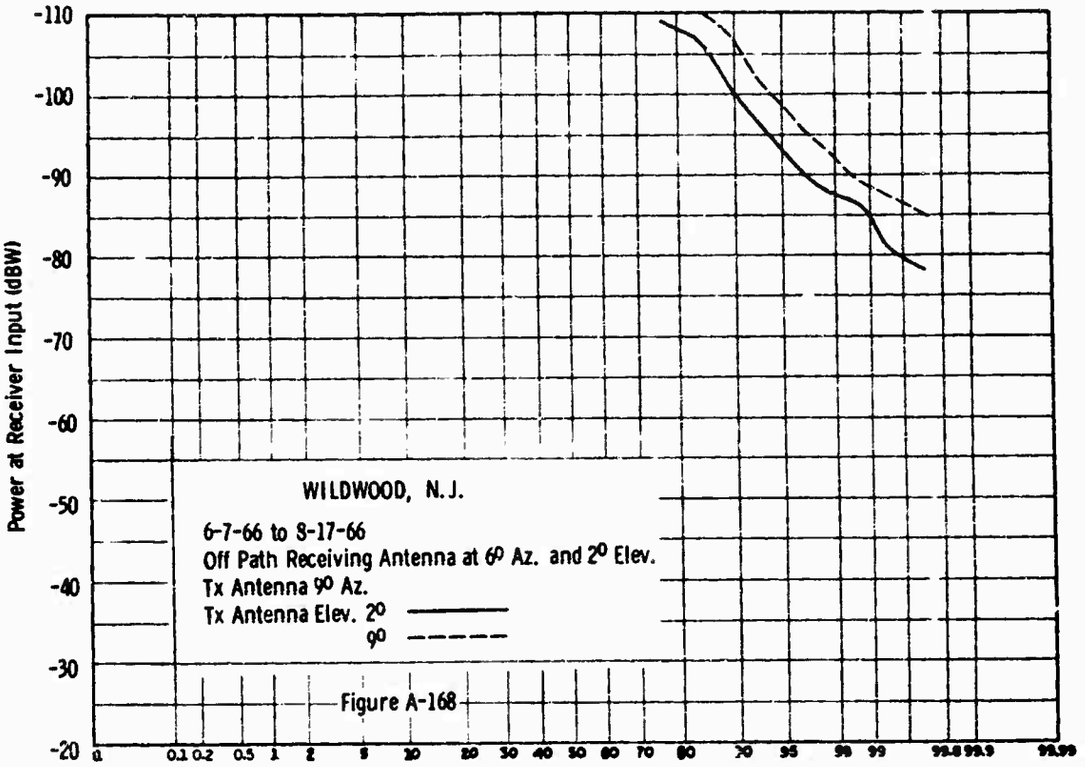



Figure A-168

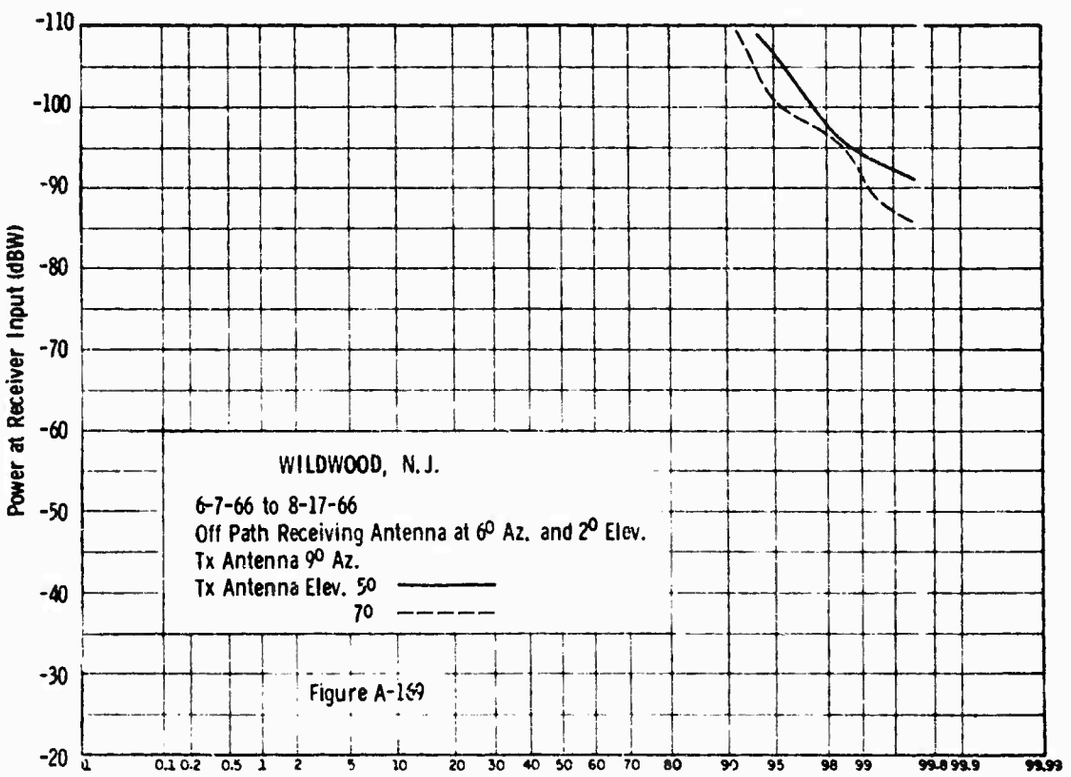



Figure A-169

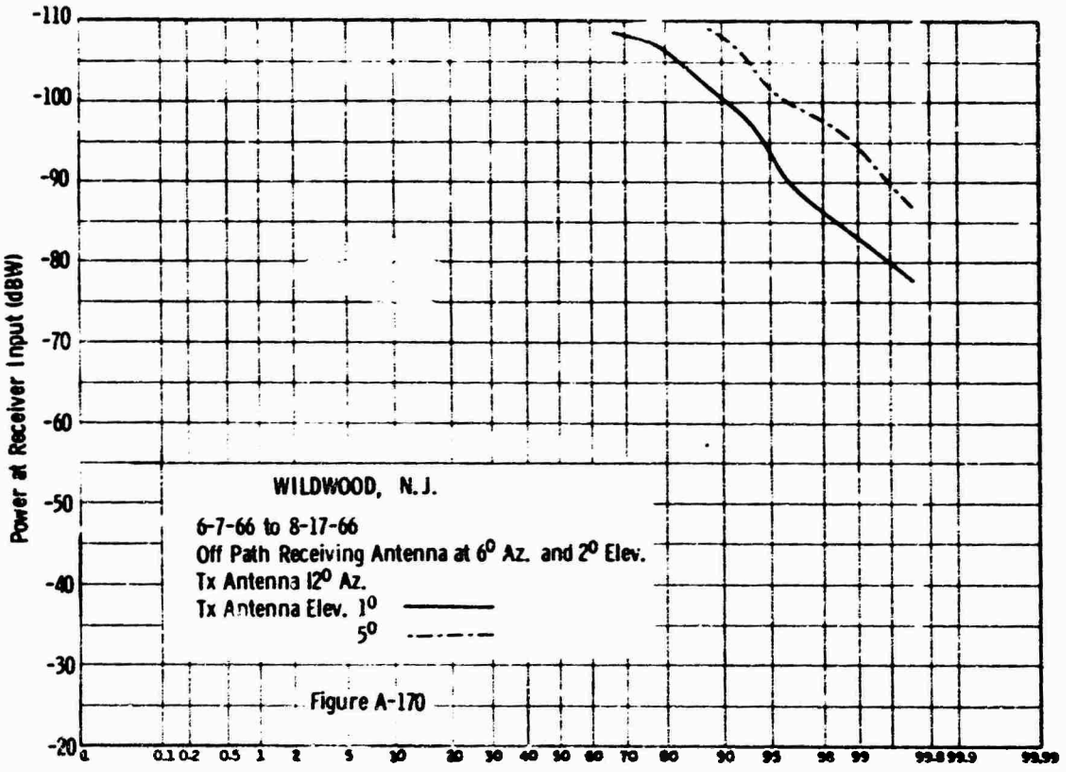



Figure A-170

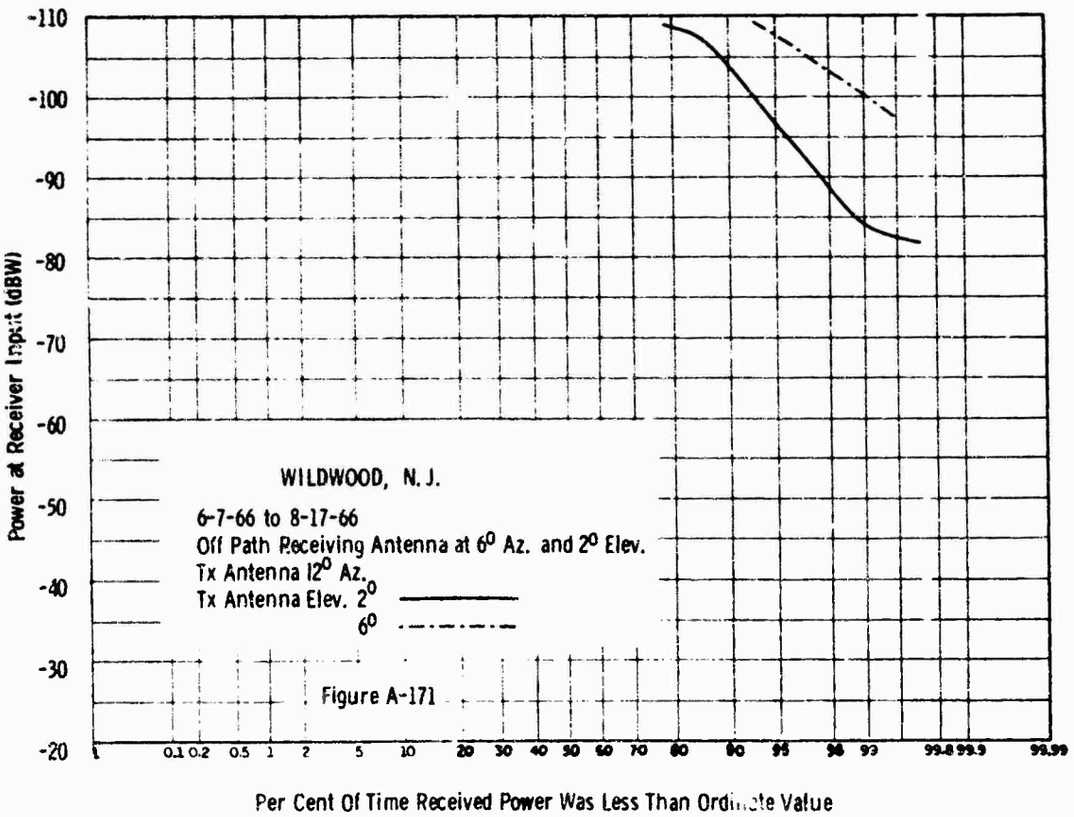



Figure A-171

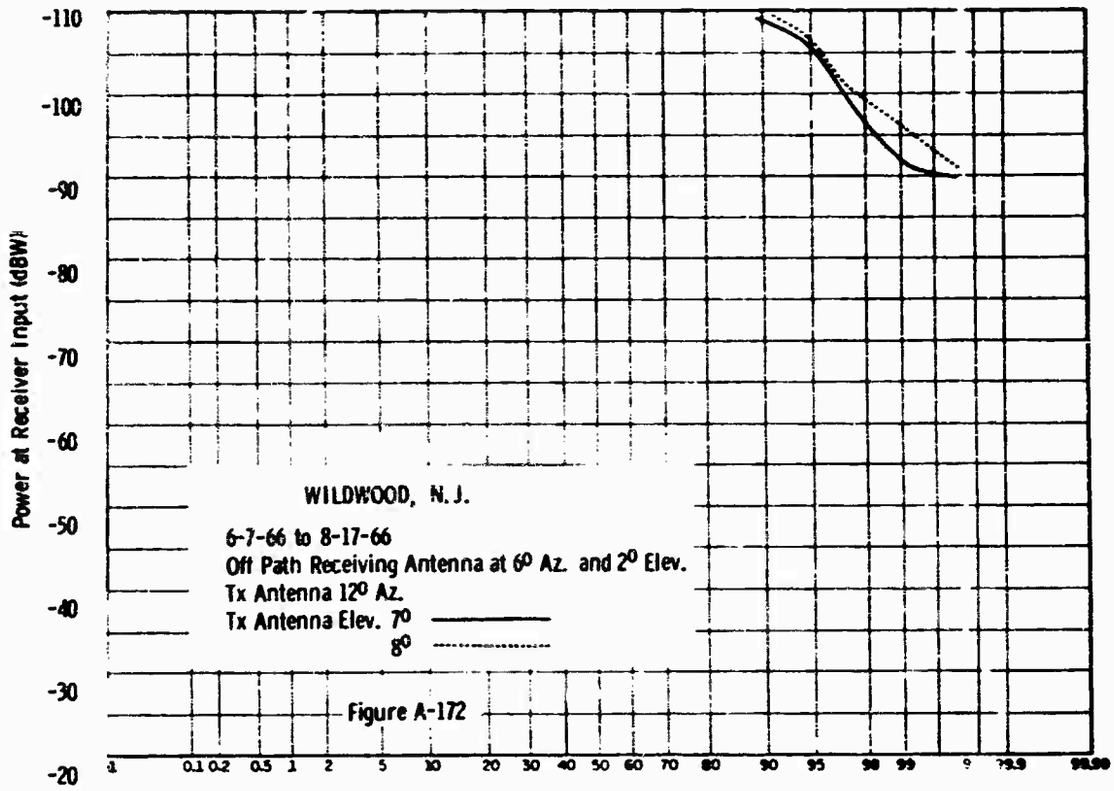



Figure A-172

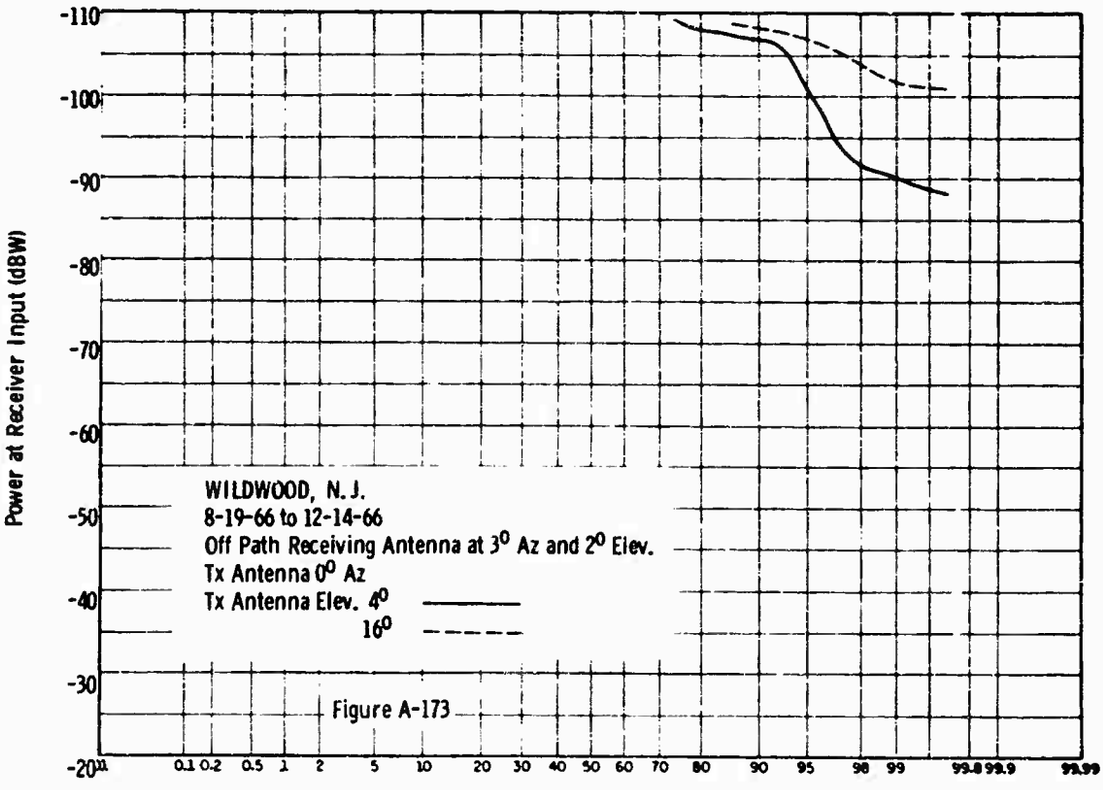
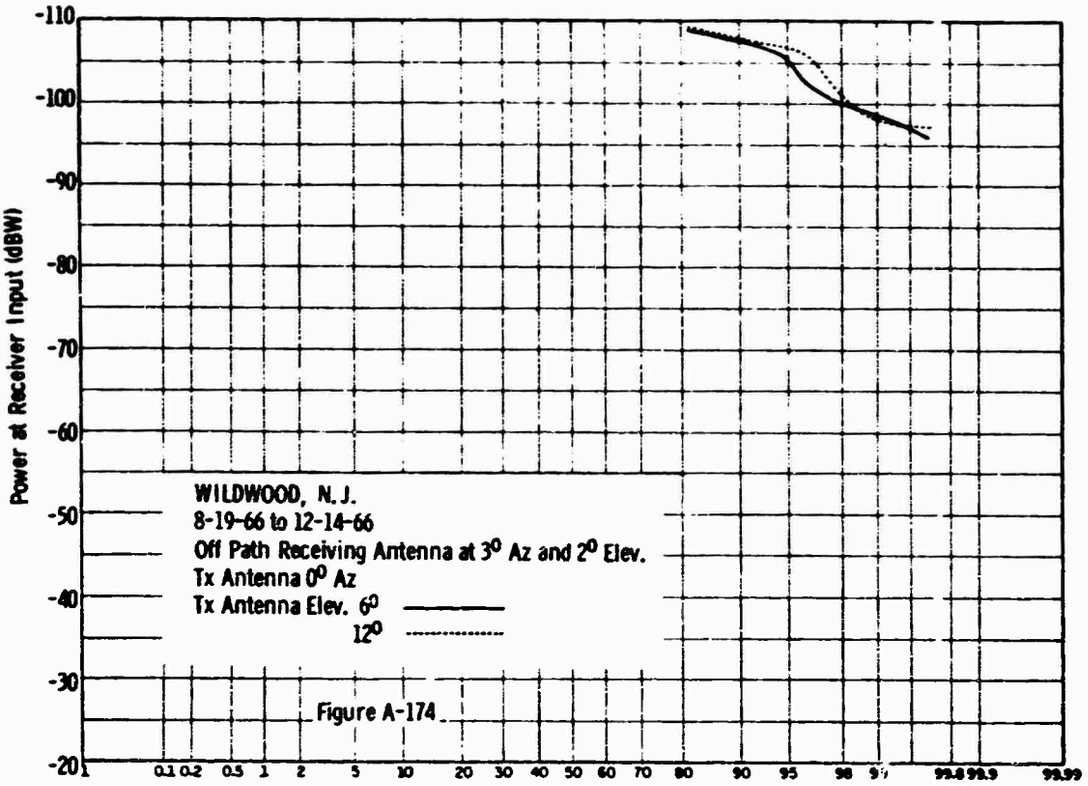



Figure A-173

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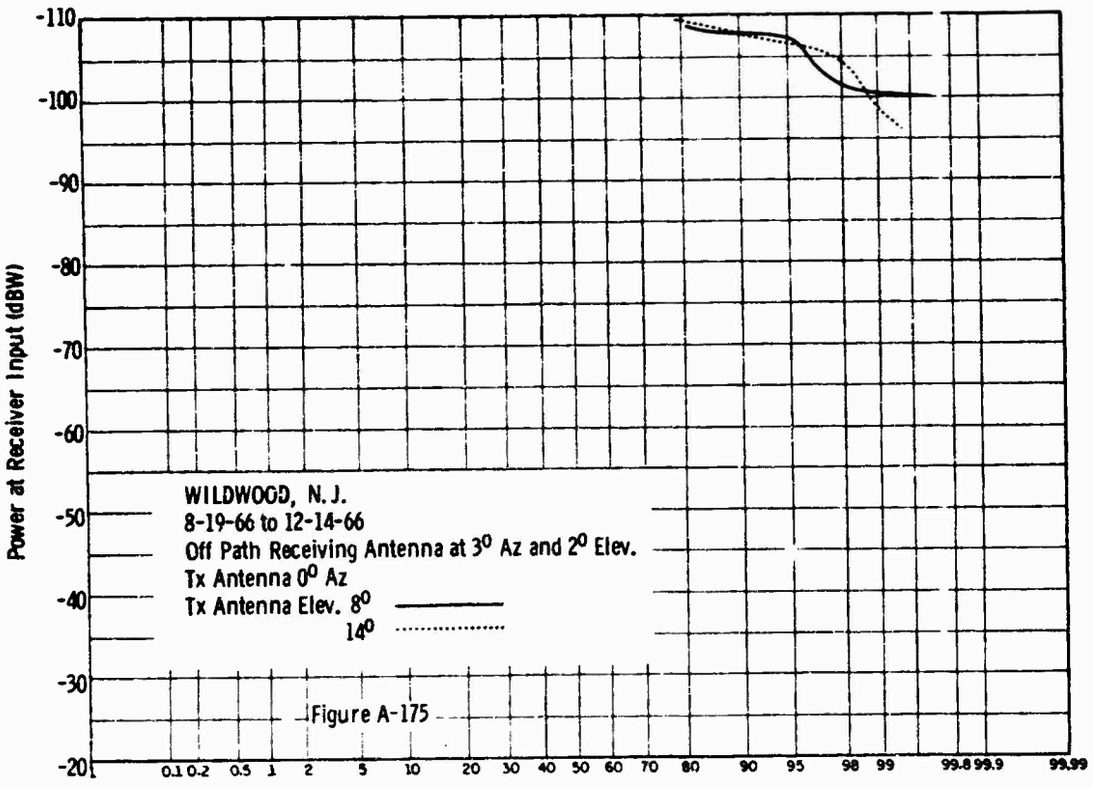



Figure A-175

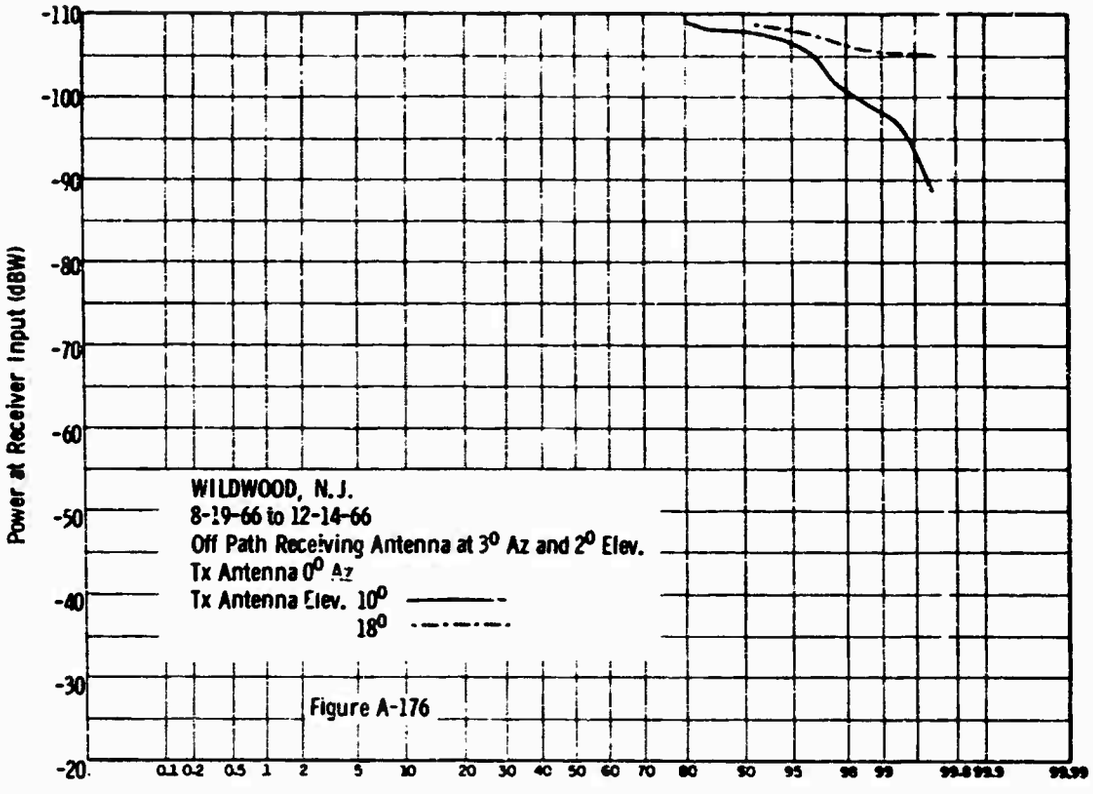



Figure A-176

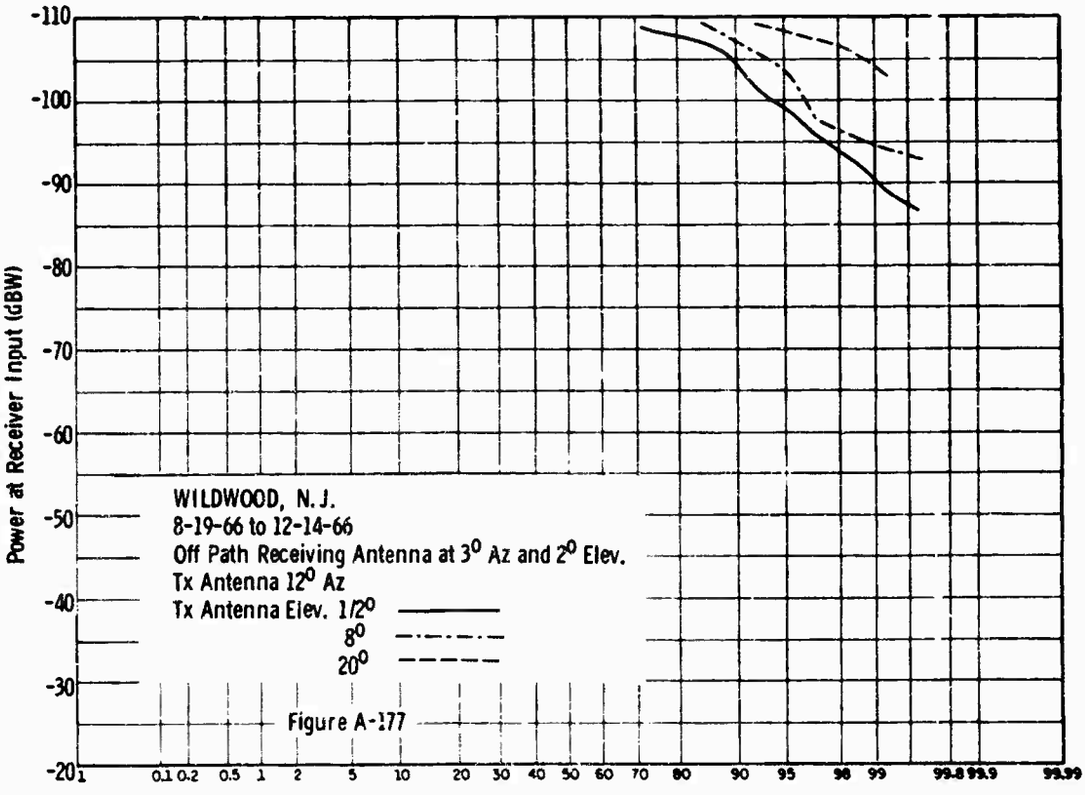



Figure A-177

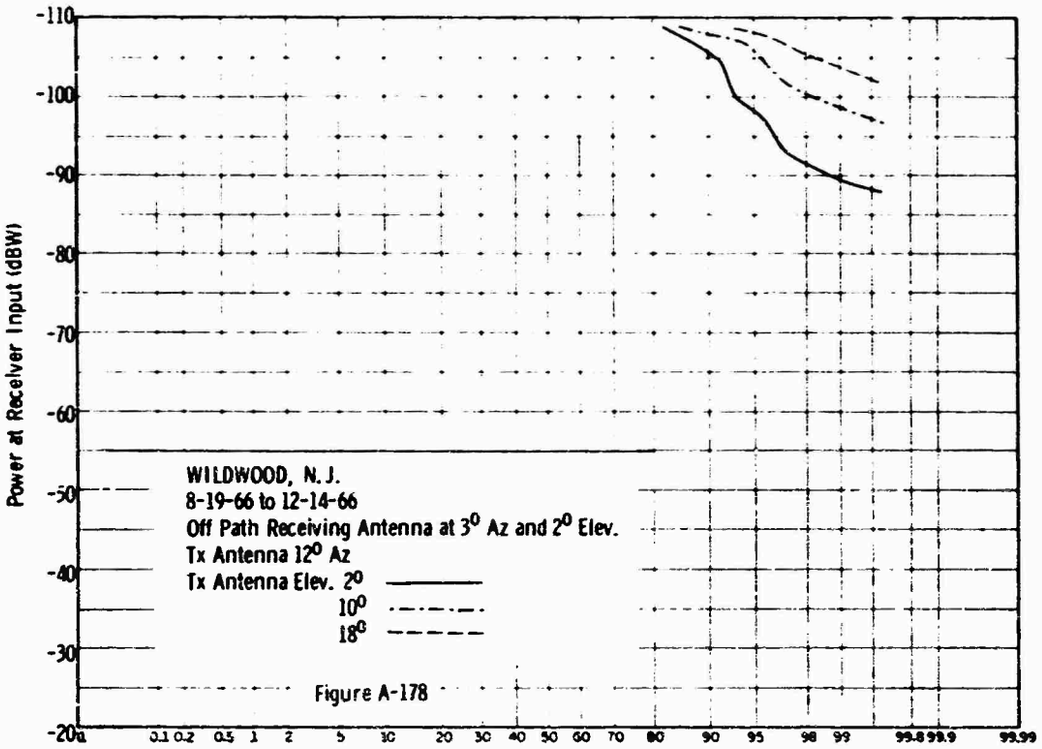



Figure A-178

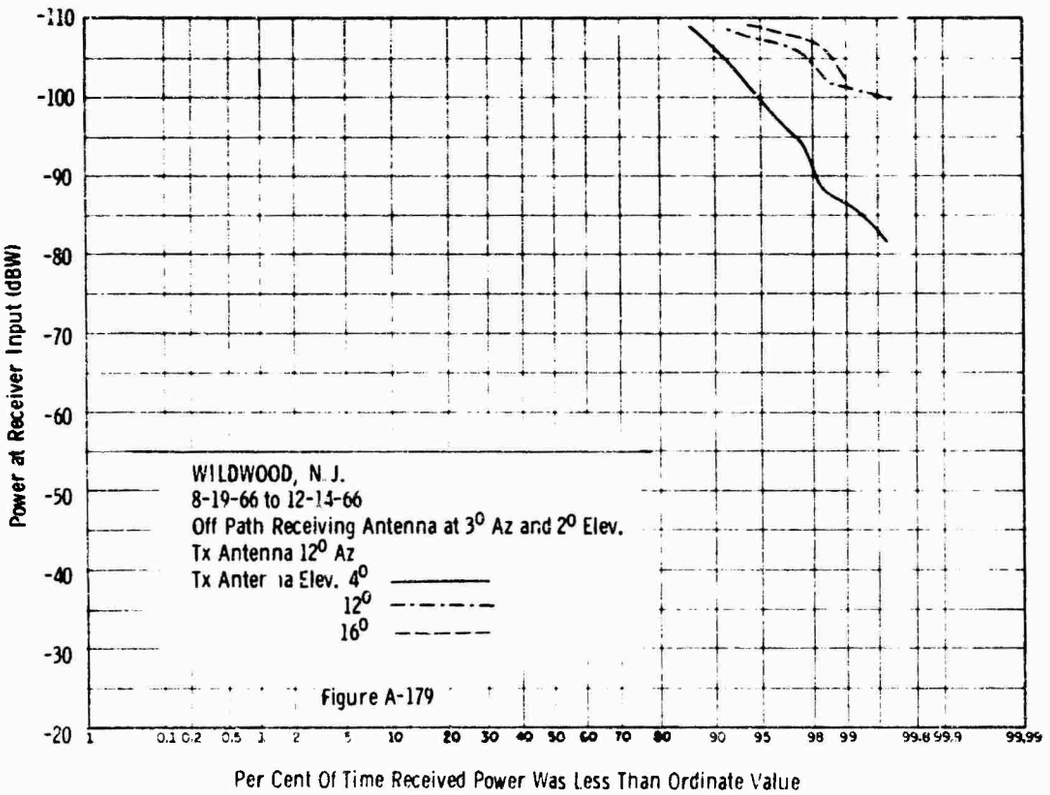



Figure A-179

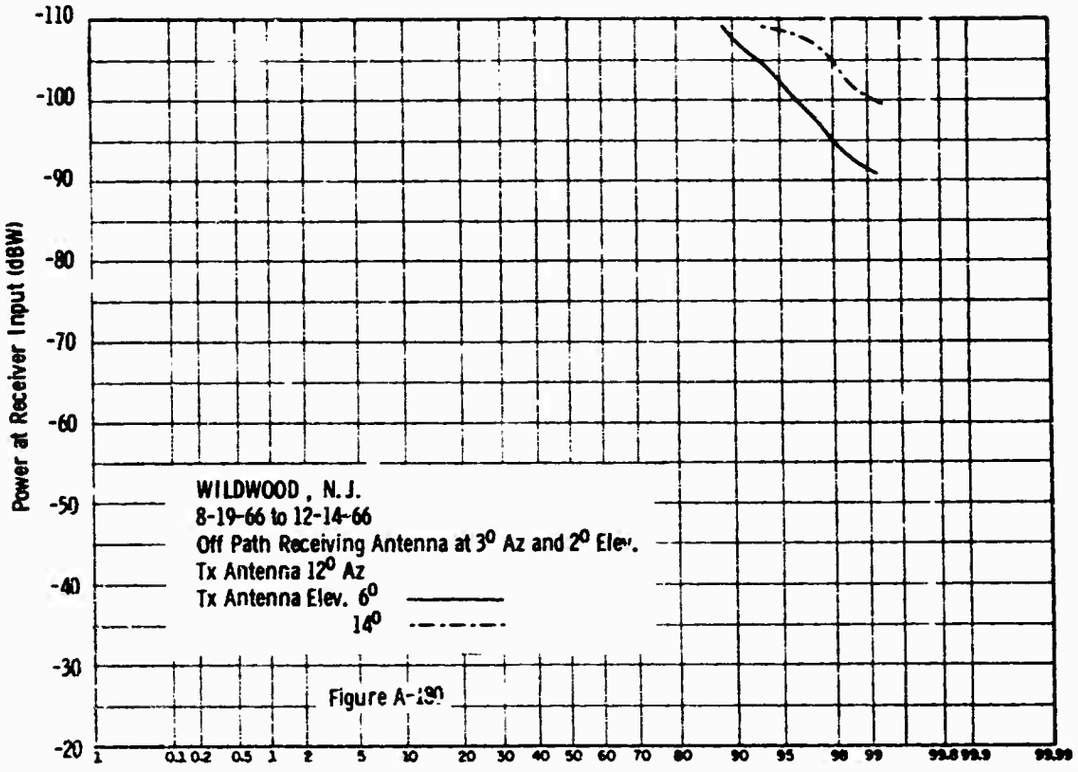



Figure A-180

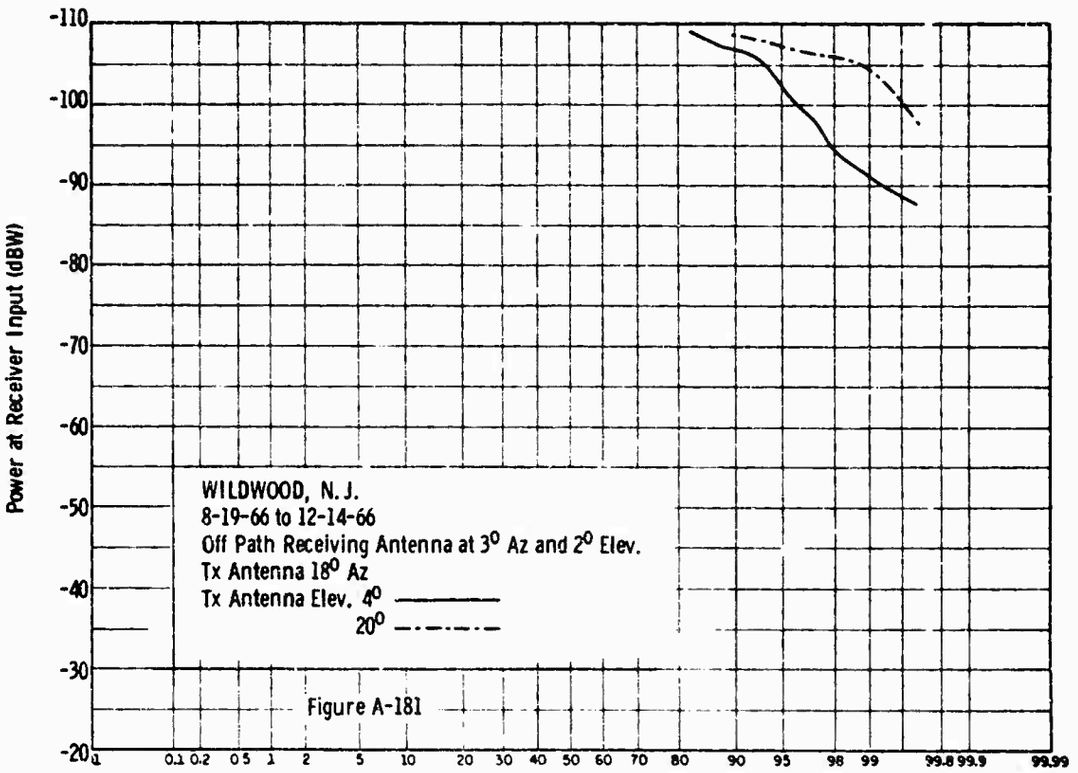



Figure A-181

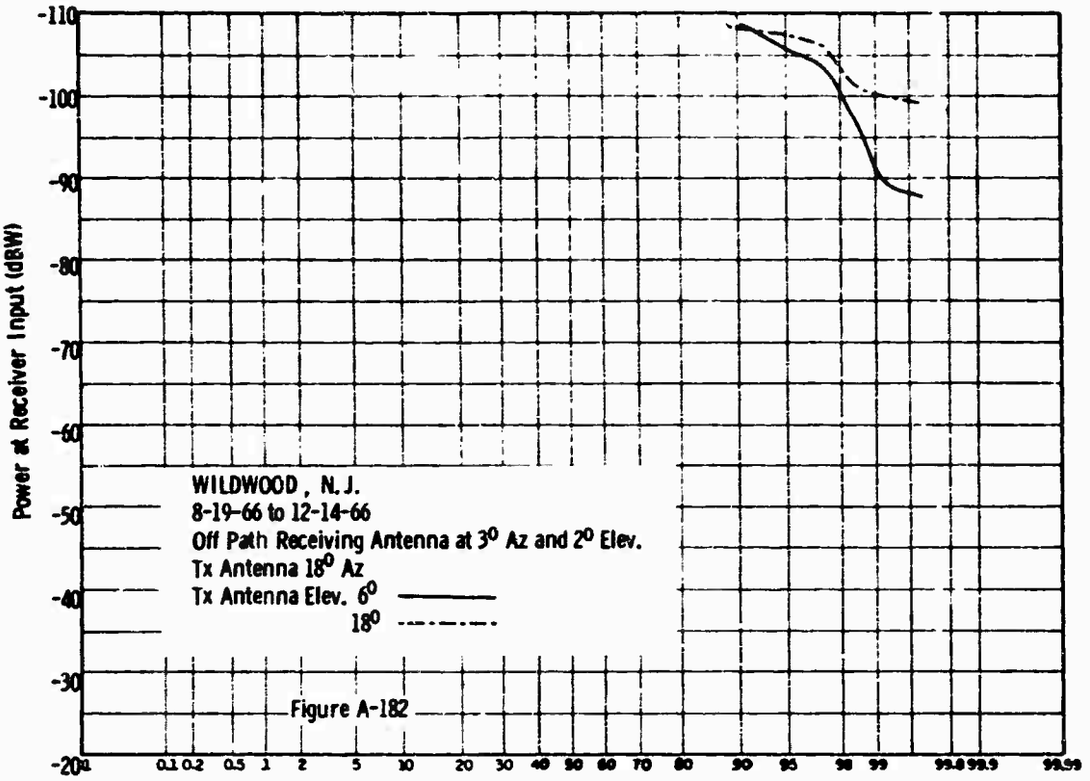



Figure A-182

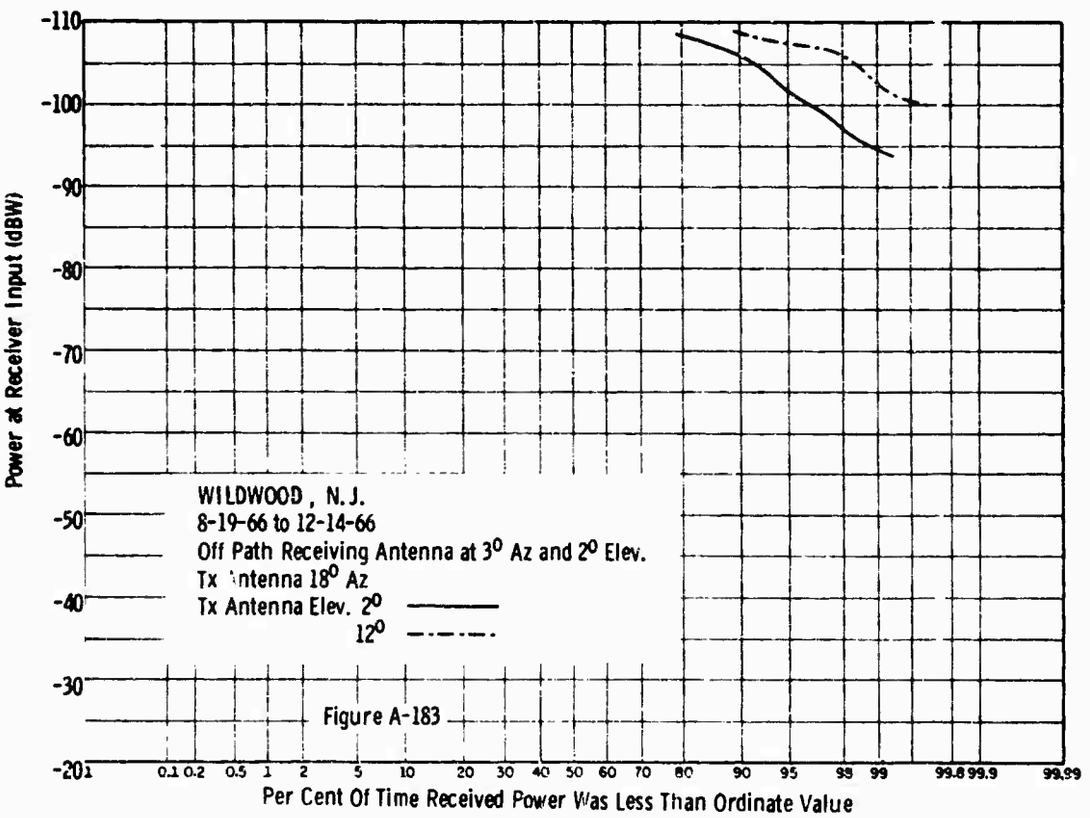



Figure A-183

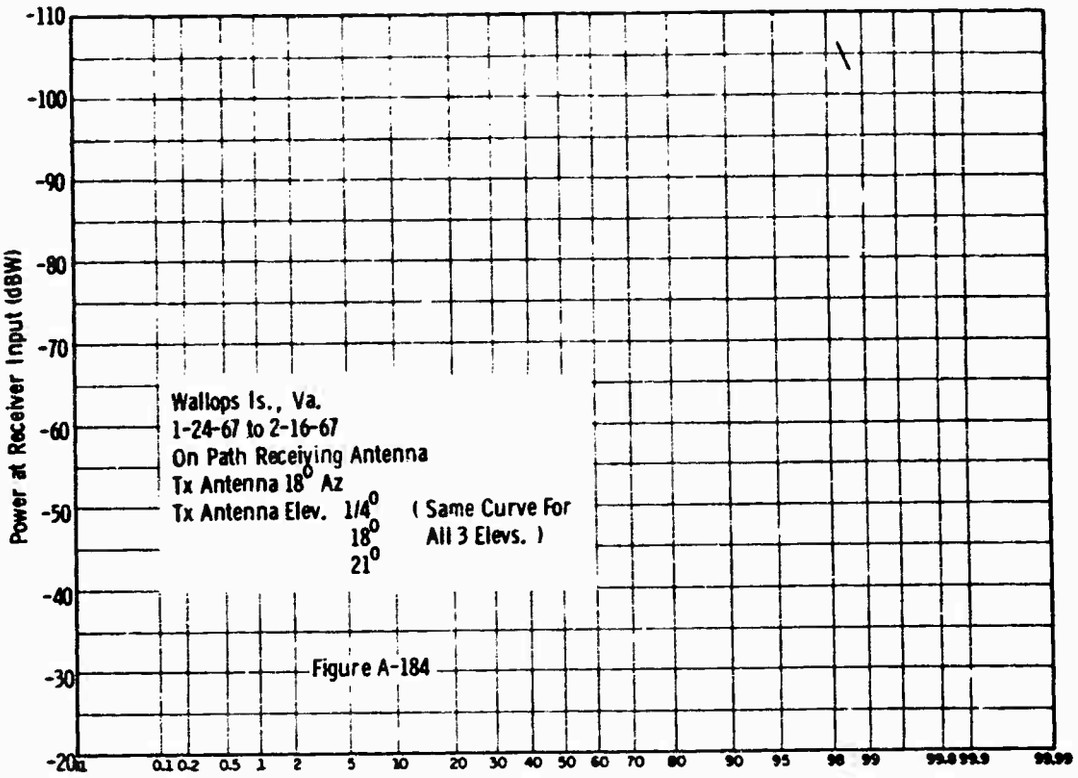
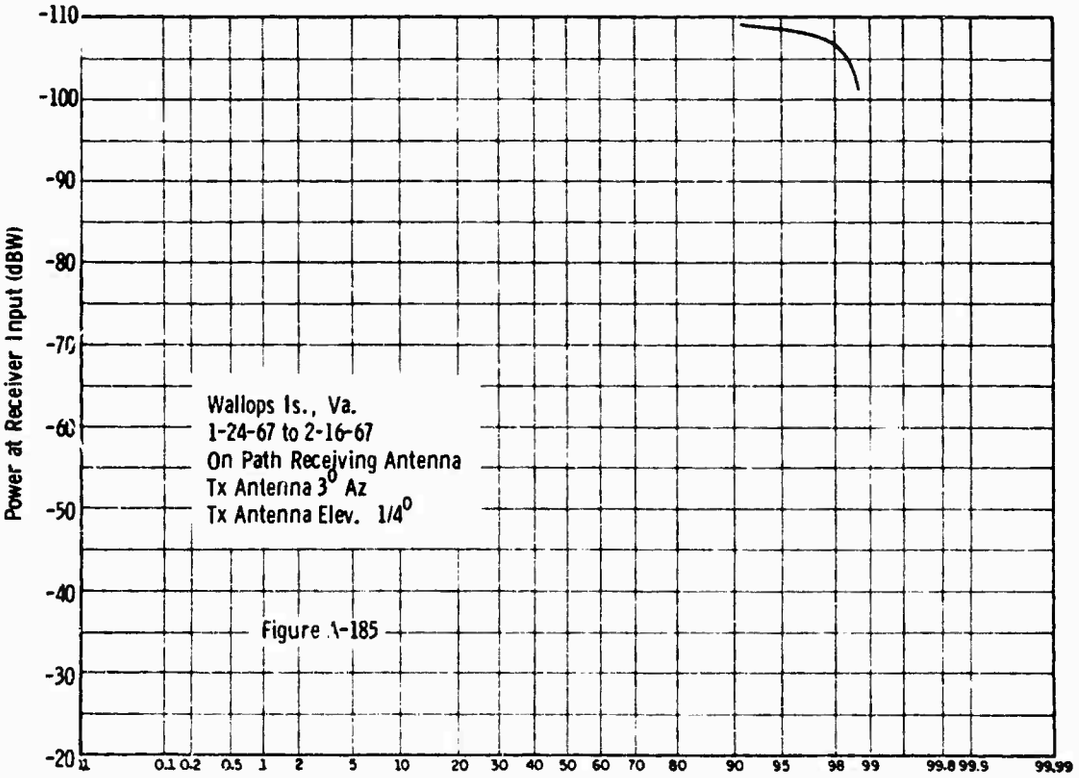



Figure A-184

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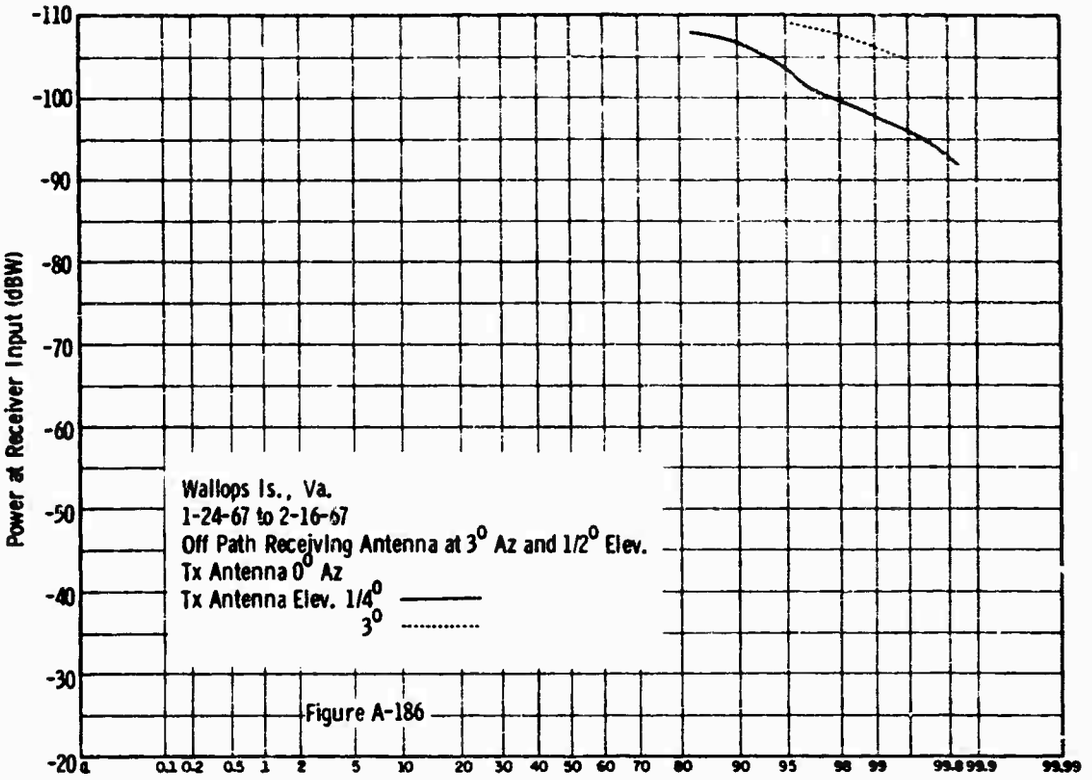


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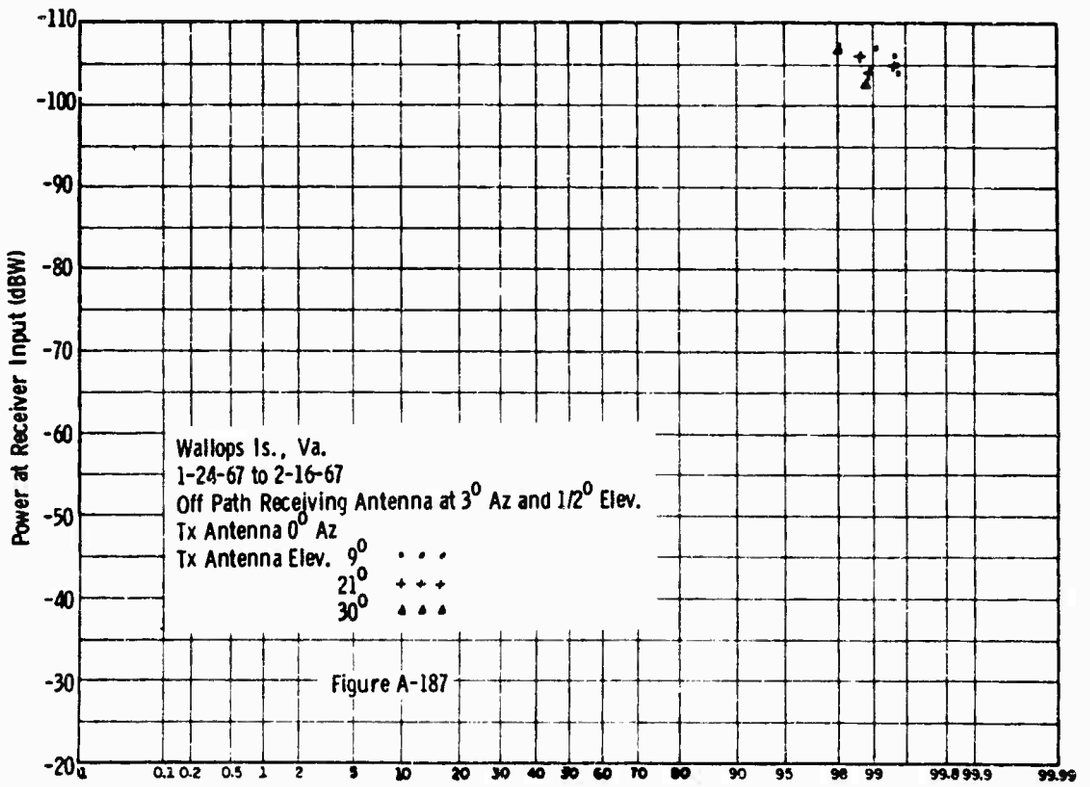
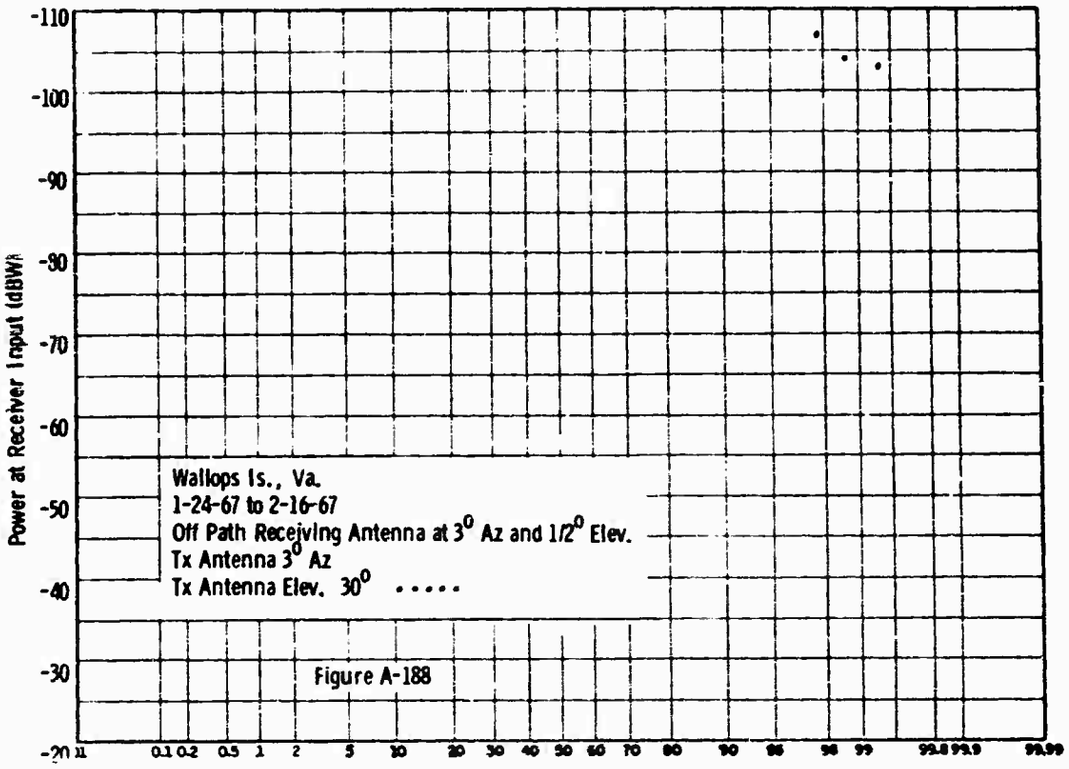
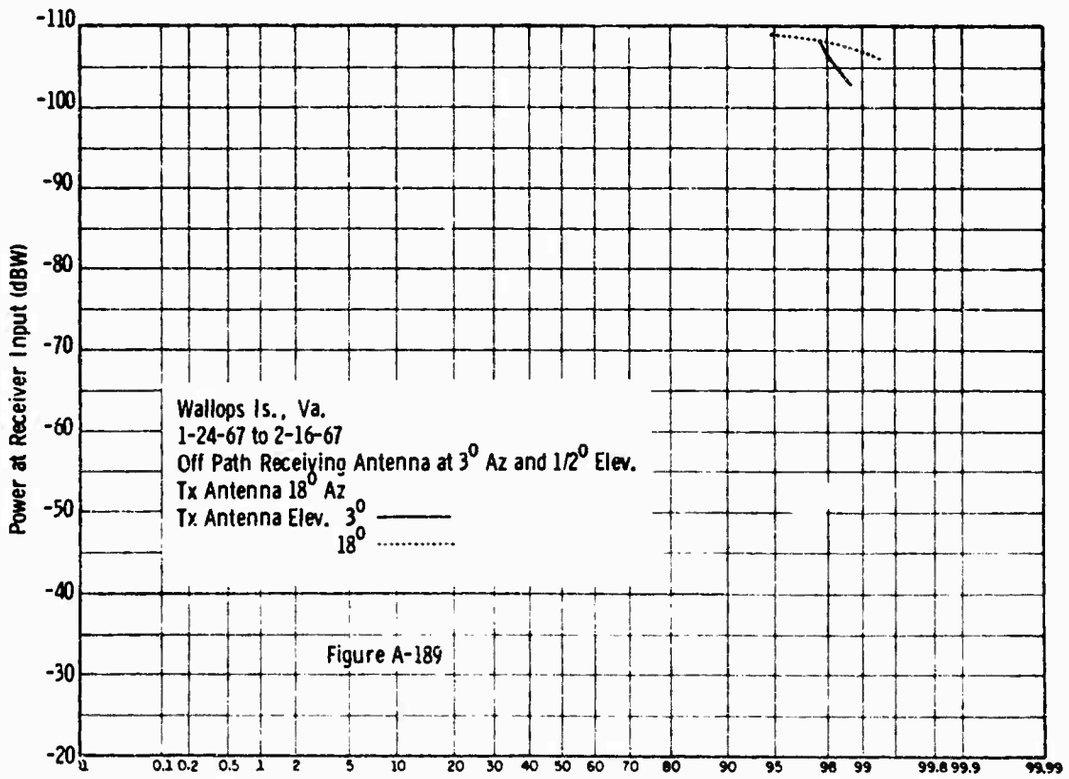



Figure A-187


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
Wallops Is., Va.
1-24-67 to 2-16-67
Off Path Receiving Antenna at 3° Az and 1/2° Elev.
Tx Antenna 3° Az
Tx Antenna Elev. 30° .....
Figure A-188
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value


-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
Power at Receiver Input (dBW)
Wallops Is., Va.
1-24-67 to 2-16-67
Off Path Receiving Antenna at 3° Az and 1/2° Elev.
Tx Antenna 18° Az
Tx Antenna Elev. 3° ———
18° .....
Figure A-189
0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99
Per Cent Of Time Received Power Was Less Than Ordinate Value

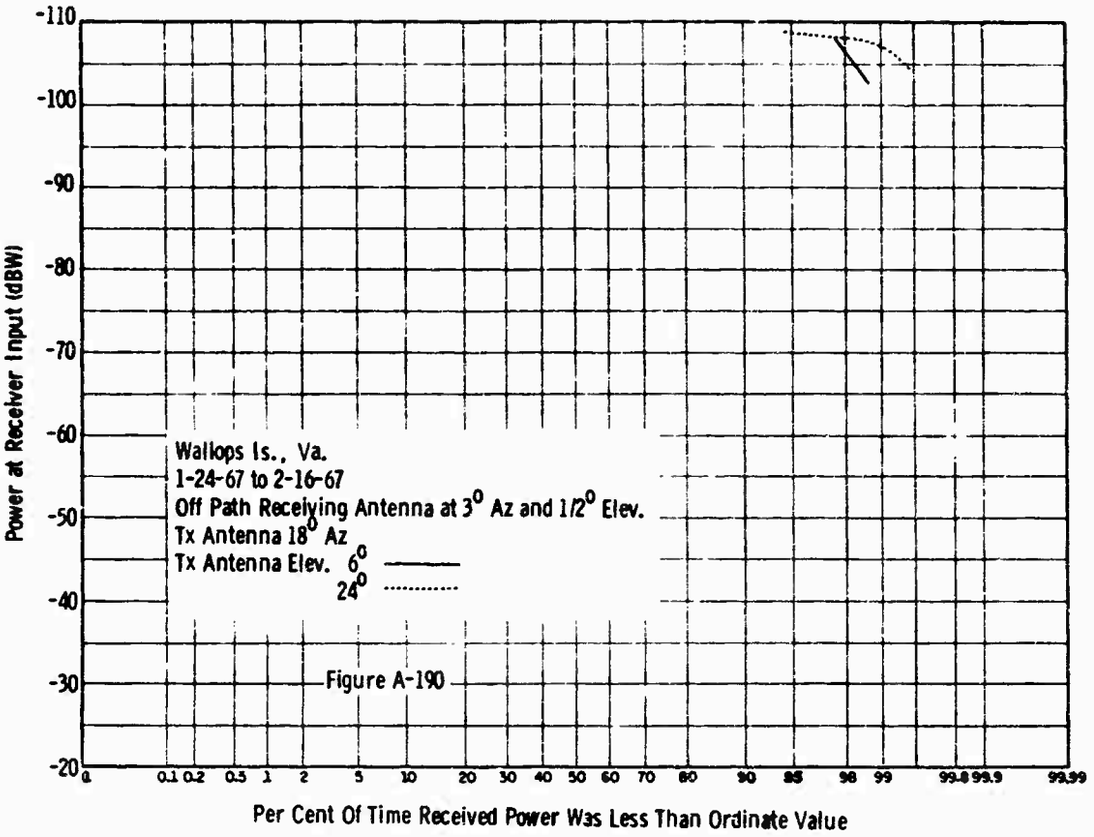



Figure A-190

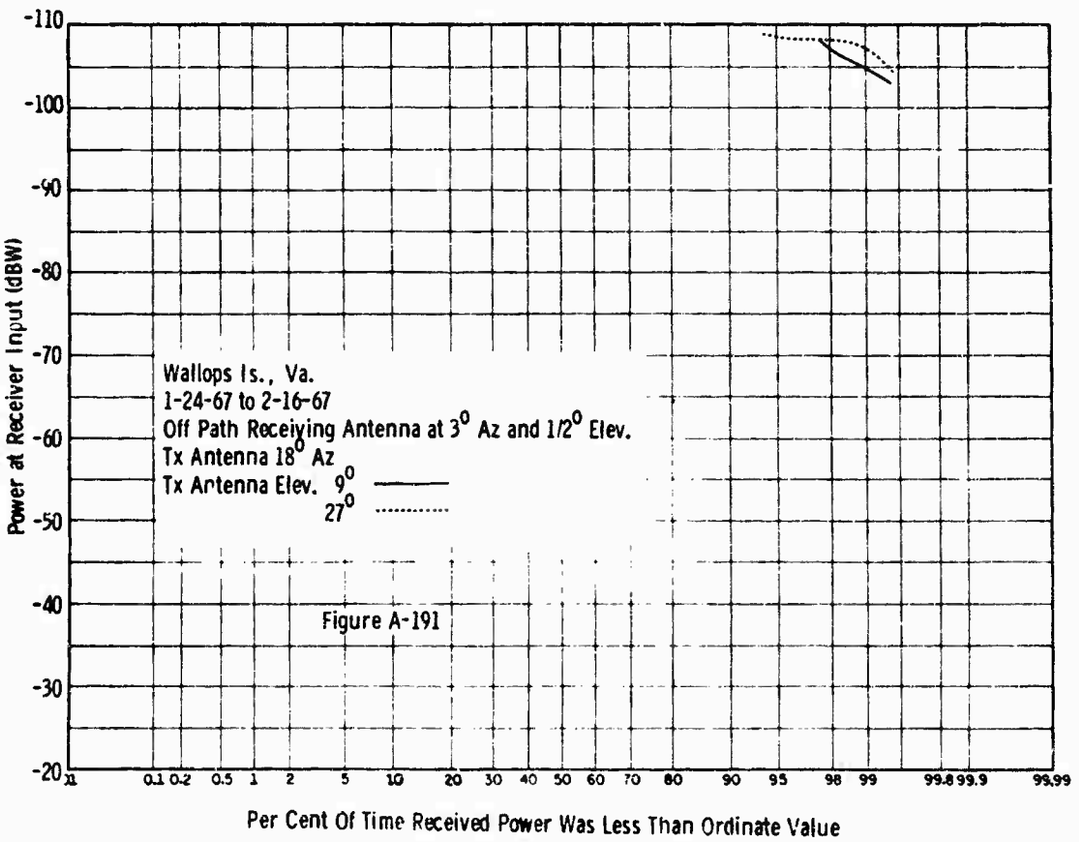



Figure A-191

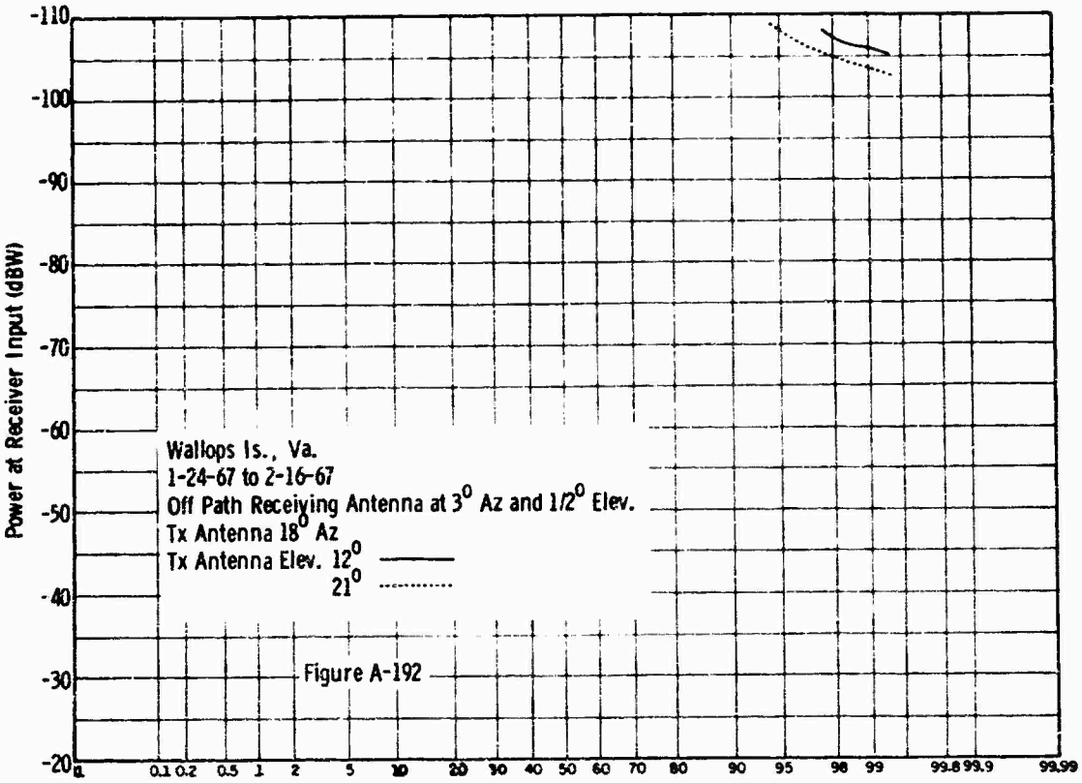



Figure A-192

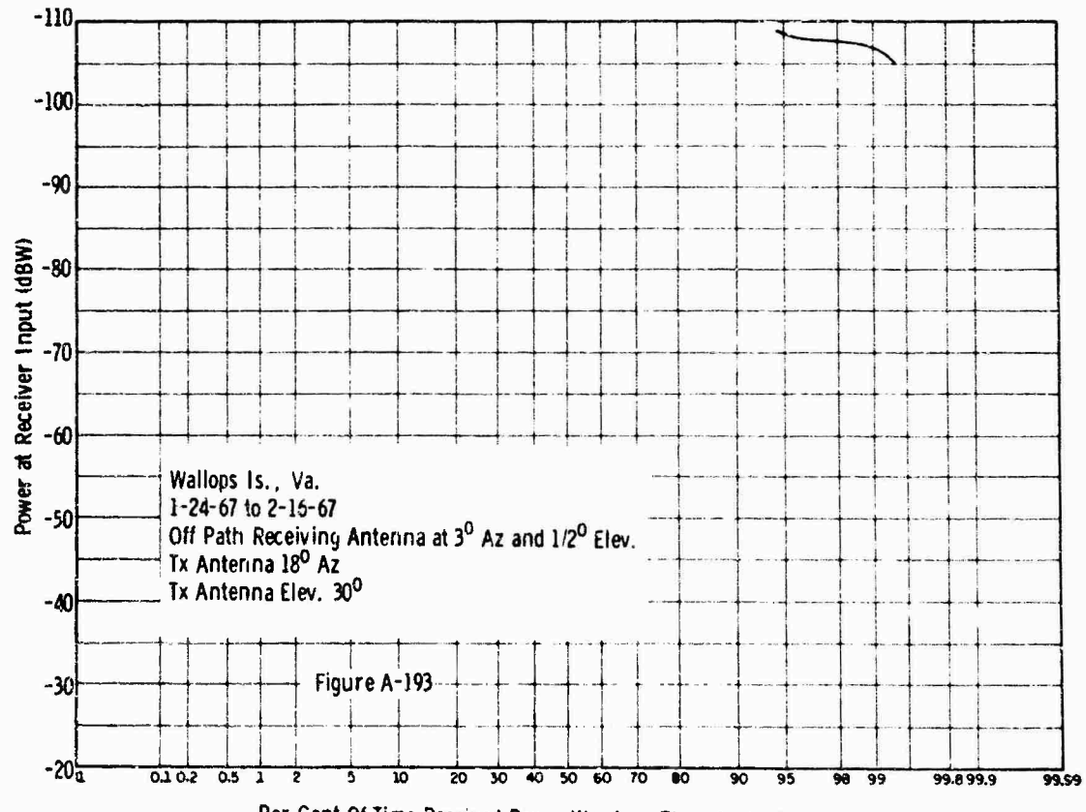



Figure A-193